



March 5, 2025

Consumer Affairs Office
Minnesota Public Utilities Commission
127 7th Place East, Suite 350
Saint Paul, MN 55101-2147

RE: **EERA Comments and Recommendations on Request to Amend Permits**

In the Matter of Applications of Plum Creek Wind Farm, LLC for a Certificate of Need, Site Permit, and Route Permit for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties, Minnesota.

Docket Nos. IP-6997/CN-18-699, WS-18-700, and TL-18-701

Dear Consumer Affairs Office:

Attached are the comments and recommendations of the Minnesota Department of Commerce, Energy Environmental Review and Analysis (EERA) staff, filed in response to the Commission's Notice of Comment Period issued February 12, 2025, in the above matter.

Plum Creek Wind Farm, LLC (Plum Creek) has requested an amendment to the site permit to allow use of different turbine models, re-locate one of the two collector substations, reduce the number and size of laydown areas, extend the date by which construction must commence, and update certain permit conditions. Plum Creek has requested amendments to the route permit to shorten the permitted route by replacing a 7.5 mile segment with a new 4.1 mile segment and update certain permit conditions.

The authorized representative for the Project is:

Marta Lasch
Plum Creek Wind Farm, LLC
8400 Normandale Lake Boulevard, Suite 1200
Bloomington, MN 55437
Telephone: 952-988-9001
email: Marta@nationalgridrenewables.com

EERA staff recommends

- Plum Creek provide additional information in a supplemental filing.
- Modifications to some existing site and route permit conditions.
- New permit condition to both the site and route permits to reflect the record and to reflect language in more recent permits.

EERA staff is available to answer any questions the Commission may have.

Sincerely,

/s/ *Suzanne Lamb Steinhauer*

Suzanne Steinhauer
Environmental Review Manager
Energy Environmental Review and Analysis



BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS COMMENTS AND RECOMMENDATIONS

Plum Creek Wind Farm and Transmission Line

DOCKET NOS. IP-6997/CN-18-699, WS-18-700, TL-18-701

Date: March 5, 2025

EERA Staff: Suzanne Steinhauer | 651-539-1843 | suzane.steinhauer@state.mn.us

In the Matter of the Applications of Plum Creek Wind Farm, LLC for a Certificate of Need, Site Permit, and Route Permit for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties, Minnesota.

Issues Addressed: These comments and recommendations address Plum Creek Wind Farm, LLC's request for amendments to its certificate of need and site and route permits for the Plum Creek Project.

Additional documents and information can be found on

eDockets: <https://www.edockets.state.mn.us/documents> Docket Number(18-699, 18-700, or 18-701) and on the Department of Commerce's website: <https://apps.commerce.state.mn.us/web/project/13894>.

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-539-1530. Persons with a hearing or speech impairment may call using their preferred telecommunications relay service.

Introduction and Background

On September 23, 2021, the Commission issued an order granting a certificate of need and issuing a site permit and a route permit to Plum Creek Wind Farm, LLC (Plum Creek) for the construction and operation of the Plum Creek Wind Facility, a 414-megawatt large wind energy conversion system consisting of 67 to 74 wind turbines ranging from 5.6 to 6.2 megawatts in size and an associated 31-mile 345 kilovolt transmission line.¹ The Plum Creek Wind Facility is located in portions of Cottonwood,

¹ Commission, *Order Granting Certificate of Need and Issuing Site Permit and Route Permit*, September 23, 2021, eDocket ID: [20219-178198-03](#), [20219-178198-06](#)

Murray, and Redwood counties. Following requests by Plum Creek, the Commission has twice amended the site permit:

- In response to a request for clarification from Plum Creek, the Commission amended the permit condition regarding shadow flicker in its order of January 13, 2022.²
- On May 2023, Plum Creek's requested amendments to the CN and site permit to delay the start of construction and extend the in-service date of the wind project and associated HVTL.³ In its order of July 5, 2023, the Commission approved Plum Creek's request and amended the site permit's expiration date to 2051.⁴

On February 4, 2025, Plum Creek filed requests to amend the certificate of need, site permit,⁵ and route permit.⁶ In its request to amend the site permit Plum Creek proposes to:

- Replace the Vestas V162 5.6 MW and Siemens Gamesa SG170 6.2 MW turbines identified in the existing permit to allow use of one of four possible new turbine models. Plum Creek proposes the same layout for all models. Depending upon the model(s) selected, Plum Creek would install between 68 and 77 turbines, with between one and 10 alternate locations. The turbine models proposed by Plum Creek are:
 - 77 GE 3.8-154, with a 98 meter hub height;
 - 68 GE 6.1-158, with a 117 meter hub height;
 - 76 Vestas V150-4.5 with a hub height of 98 to 120 meters; and
 - 77 Vestas V163-4.5, with a hub height of 98 or 113 meters
- Shift Collector Substation 1 to a new location in Township 108N, Range 38W, Section 5 (herein referred to as Revised Collector Substation 1);
- Reduce the size and number of temporary laydown yards from up to three totaling approximately 18 acres to one temporary laydown yard that is about 15 acres in size; and
- Extend the date by which construction of the Wind Project and the associated 345 kilovolt (kV) high voltage transmission line (HVTL Project), herein collectively referred to as the Plum Creek Project, to September 25, 2027, or two years from the issuance of the site permit amendment,

² Commission, Order, January 14, 2022, eDocket ID: [20221-181543-01](#)

³ Plum Creek, *Extension/Variance Request – Notice of Delayed In-service Date and Request for Extension*, May 5, 2023), eDocket ID: : [20235-195613-02](#)

⁴ Commission, Order, July 5, 2023, eDockets ID. [20237-197232-03](#).

⁵ Plum Creek, Site Permit Amendment Request (SPAR), February 4, 2025, eDocket ID: [20252-214951-01](#), [20252-214951-02](#), [20252-214951-03](#), [20252-214951-04](#), [20252-214951-05](#), [20252-214951-06](#), [20252-214951-07](#), [20252-214951-08](#), [20252-214951-09](#), [20252-214951-10](#), [20252-214951-11](#)

⁶ Plum Creek, Route Permit Amendment Request (RPAR) February 4, 2025, eDocket ID: [20252-214954-01](#), [20252-214954-02](#), [20252-214954-03](#), [20252-214954-04](#), [20252-214954-05](#), [20252-214954-06](#), [20252-214954-07](#), [20252-214954-08](#), [20252-214954-09](#)

whichever is later, and extend the in-service date to December 31, 2028, to allow adequate time for construction activities to be completed.

In its request to amend the route permit, Plum Creek proposes to replace a 7.5 mile segment of the southern portion of the permitted route with a new 4.1 mile segment. The requested amendment would shorten the permitted 31-mile route to approximately 28 miles. Plum Creek also seeks to allow construction to begin as late as fall 2027.⁷

On February 12, 2025, the Commission issued a notice soliciting comments on the Plum Creek's amendment requests. The Commission identified the following topics for comment:

- Should the Commission approve Plum Creek's requests to amend the site permit for the Plum Creek Project?
- Should the Commission approve Plum Creek's request to amend the route permit for the Plum creek Wind Project?
- If the amendments are authorized, what additional conditions, if any, should the Commission impose?
- Are there other issues or concerns related to this matter?⁸

Regulatory Process and Procedures

Under Minn. R. 7854.1300, the Commission may consider amending the site permit for a wind facility on its own initiative or upon the request of any person. Under Minn. R. 7850.4900, the Commission may amend the condition of a route permit upon the request of any person. The amendment procedures for both wind site permits and route permits require that the Commission provide notice and afford due process to the permittee.

EERA Staff Analysis and Comments

EERA staff appreciates Plum Creek's efforts to coordinate prior to filing the amendment requests. EERA staff has reviewed the amendment requests and supporting documents and provides the following analysis and comments in response to the Commission's notice.

EERA's comments are focused on whether the Commission should amend the site permit and the route permit and, if so, what additional conditions should be required. EERA staff have no comment on whether the Commission should approve Plum Creek's request to amend the certificate of need and has not identified other issues or concerns related to the matter.

⁷ Plum Creek, *Route Permit Amendment Request* (RPAR), Section 1, p. 1 (note- there appear to be errors on the page numbering in the request, in subsequent comments, EERA staff refer to both Section numbers and page numbers in the RPAR request to avoid confusion).

⁸ Commission, *Notice of Comment Period on Request to Amend Permits*, February 12, 2025, eDocket ID: [20252-215297-01](#)

EERA notes that National Grid Renewables, Plum Creek's parent, has proposed to sell energy from the Plum Creek project to Xcel Energy. In Plum Creek's proposal in docket E-002/CN-23-212, the project would also include a battery energy storage system.⁹ Plum Creek indicates it will seek a site permit for the battery energy storage system in a separate docket.¹⁰

Site Permit Amendment

EERA's comments on the requested site permit amendment are focused on the change in turbine models. Plum Creek indicates that the turbine models specified in the permit are not commercially available.¹¹ In addition to changing the turbine models, Plum Creek proposes to shift 18 turbine locations to meet FAA requirements, avoid overlap of the wind access buffer, and reduce shadow flicker. Depending upon the location, changes vary from 7 to 2,240 feet.¹² Depending upon the turbine model selected, the proposed amendment may increase the total number of turbines from up to 74, as specified in the existing permit, to up to 77.

Although the amendment request also proposes to relocate Collector Substation 1, the location of the substation is not specified in the site permit, so no permit amendments are required. EERA has reviewed the proposed location shift and finds it generally consistent with the record.

EERA staff notes that the permit does not specify an in-service date. With respect to the extension of the construction date, the permit does not specify a date, but rather requires construction to commence within a certain timeframe following issuance of the permit.

Existing Permit Conditions – Amendments and Comments

EERA has reviewed the amendment request and believes that the proposed changes are generally consistent with the existing permit. EERA staff does believe that the proposed changes would require amending certain permit conditions, many of which were proposed by Plum Creek in Appendix A to the site permit application request (SPAR). In this section, EERA staff provides its recommendations on amendments to the existing conditions. EERA staff has reviewed the proposed changes with respect to noise and shadow flicker and believes the proposed changes are consistent with the permit. Although EERA staff does not recommend amending the noise and shadow flicker conditions, EERA staff includes analysis under the permit headings.

Permit Cover

Plum Creek proposes to amend the cover of the permit to allow up to 77 turbines and extend the expiration date from 2051 (30 years from the date of the original permit) to 2055 (30 years from the

⁹ National Grid Renewables, *Plum Creek Wind + Storage Filing Requirements*, January 2024 (re-filed as public July 23, 2024) eDockets ID: [20247-208830-01](#)

¹⁰ SPAR, p. 14

¹¹ SPAR, p. 2

¹² SPAR, p. 12, Table 3.1-1

date of the anticipated permit amendment). EERA staff supports the change in turbine number and believes the extension of the expiration date would provide Plum Creek with a desired certainty.

Project Description (2.0)

If the Commission approves the amendment request, the project description must be changed to describe the turbines being used. EERA supports the revisions to Section 2 shown in Appendix A, but recommends the description replace “project area” with “site,” for consistency of the permit. Section 5.3.18, uses “project area” to refer to the communications in the general vicinity of the permitted project.

Associated Facilities (2.1)

Plum Creek proposes amending this section of the permit to clarify that electrical collection lines and communications lines will be placed below ground and reducing the number of laydown yards from three to one. EERA supports this amendment.

Designated Site (3)

Plum Creek proposes amending this section of the permit to describe the turbines reflect a smaller footprint, reducing the acreage from up to 113.1 to no more than 84 acres. EERA staff supports this amendment with the additional modification of “site” to replace “project area,”

3. Designated Site

The site designated by the Commission for the Plum Creek Wind Farm is the site depicted on the site maps attached to this permit. The [project-area site](#) encompasses approximately 73,000 acres. Upon completion, the project will occupy no more than ~~113.1~~ 84 acres of land converted to wind turbines and associated facilities approved by this permit. Within the project boundary, the LWECS and associated facilities shall be located on lands for which the Permittee has obtained wind rights.

Noise (4.3 and 7.4)

Section 4.3 of the permit requires the project to comply with MPCA noise standards at all times and Section 7.4 requires the permittee to conduct a post-construction noise evaluation once the project is operating. Plum Creek modeled noise for the proposed turbines at 461 residences within the one mile of the site boundary. The modeling showed turbine-only sound at less than 47 dBA for all 461 residences. The modeled results are consistent with EERA guidance.¹³ Plum Creek has not proposed to modify these sections of the permit, and EERA does not believe any amendments are needed.

Wind Turbine Towers (4.9)

Plum Creek proposes amending this section of the permit to describe the turbine models proposed in the SPAR. The turbine descriptions in the proposed revisions are consistent with the information provided in Table 3.0-2 of the SPAR. Although the models are different, the dimensions are comparable. EERA notes although there is a note in Table 3.0-2 defining a cut-in speed, the row containing cut-in

¹³ Commerce, 2022, *Application Guidance for Site Permitting of Large Wind Energy Conversion Systems in Minnesota*, <https://apps.commerce.state.mn.us/eera/web/project-file/12221>, p. 10

speeds of the various turbine models is missing and that information is not reflected in the proposed amendments to this section of the permit. EERA believes that the cut-in speed should be indicated in the permit, as Section 7.5.5 (Turbine Operational Curtailment) requires the permittee to lock or feather turbines up to the manufacturer's standard cut-in speed during certain times of the year to minimize bat fatalities.

EERA staff recommends Plum Creek provide the manufacturer's standard cut-in speed for all turbine models proposed, and that this section of the permit be amended to include the cut-in speed in addition to the amendments proposed by Plum Creek.

Construction and Operation Practice (5.)

Plum Creek proposes amending this section of the permit to incorporate the SPAR filed in February 2025. EERA supports this amendment.

Independent Third Party Monitoring (5.4)

Plum Creek proposes a new condition requiring independent monitoring of construction of the project. This requirement is a standard condition in more recent permits, and EERA supports its inclusion here.

Turbine Access Roads (5.3.15)

Plum Creek proposes to amend this section of the permit, but EERA is unclear as to the intent of the proposed changes. While some of the proposed changes in this section are matters of style, the proposed changes remove references to maintaining existing drainage patterns and maintaining existing fish passages. The proposed changes do not include language from more recent permits that require permittees to provide the road plans to soil and water conservation districts and landowners for comment. EERA recommends that Plum Creek clarify the intent of the amendment of this permit condition.

EERA proposes that the existing permit condition be revised consistent with the Commission's sample permit.

5.3.15 Turbine Access Roads

The Permittee shall construct the ~~least~~ fewest number of turbine access roads necessary to safely and efficiently operate the Project and satisfy landowner requests. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ditches without required permits and approvals. When access roads are constructed across streams, drainage ways, or drainage ditches, the access roads shall be designed and constructed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Any access roads that are constructed across streams or drainage ditches shall be designed and constructed in a manner that maintains existing fish passage.

Access roads that are constructed across grassed waterways that provide drainage for surface waters that are ephemeral in nature, are not required to maintain or provide fish passage. Access roads shall be constructed in accordance with all necessary township, county or state

road requirements and permits. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

The Permittee shall provide the local soil and water conservation district and participating landowners an opportunity to review and comment on access road plans in order to minimize the potential to pond and divert water creating gully erosion or the potential to cause damage or failure to existing conservation practices, such as terraces, sediment control basins or diversions prior to finalization and installation. The Permittee shall file documentation of turbine access road coordination at least 14 days prior to the pre-construction meeting

Archaeological and Historic Resources (5.3.17)

Plum Creek proposes amending this section of the permit to require the permittee to keep records of compliance with this section and provide them to Commission or Commerce staff upon request. EERA supports this amendment.

Shadow Flicker (7.2)

Plum Creek modeled potential shadow flicker for the proposed turbine models and layouts in their August 2020 application and in the 2025 SPAR. Modeling for both the layouts shown in the 2021 site permit and the amendment request used conservative assumptions (constant sun with no clouds during daytime hours, turbines running continually, windows on all sides, no buildings or vegetation that would serve as obstructions) and is likely to overestimate the actual shadow flicker experienced by nearby residents.

Modeling in the August 2020 application, which provided the analysis supporting the Commissions 2021 site permit, showed a maximum shadow flicker of approximately 28.5 hours per year for non-participating receptors and 119.9 hours for participating receptors, with between 24 and 26 participating receptors potentially experiencing more than 30 hours of shadow flicker.¹⁴ The modeling included in the amendment request showed similar results with a maximum shadow flicker of up to 105.5 hours per year for all receptors and up to 26.7 hours per year for non-participating receptors. The modeling indicated between 18 and 20 participating receptors could potentially experience shadow flicker more than 30 hours per year. Neither the 2020 nor the 2025 modeling indicated any non-participating receptors experiencing greater than 30 hours of shadow flicker.¹⁵

Plum Creek has not proposed any changes to the condition requiring preparation of a shadow flicker management plan, and EERA does not recommend changes to this permit condition.

Power Purchase Agreement (8.2)

Plum Creek proposes amending this section of the permit to require it advise the Commission if it has not obtained a power purchase agreement or other enforceable mechanism within two years of the date of the amendment permit, rather than four years as specified in the existing permit. The two year timeframe is a standard condition in recent permits, and EERA supports the proposed amendment.

¹⁴ SPAR, pp. 40-44

¹⁵ SPAR, pp. 40-44, Appendix D

Failure to Commence Construction (8.3)

Plum Creek proposes amending this section of the permit to require it advise the Commission if it has not commenced construction within two years of the date of the amendment permit, rather than four years as specified in the existing permit. The two year timeframe is a standard condition in recent permits, and EERA supports the proposed amendment.

Status Reports (10.1)

EERA staff understands the many factors outside of Plum Creek's control have contributed to the delay of the project, and indications are that the project in its current iteration will go forward in the proposed form. That said, this is the third amendment request for the permit and that Plum Creek does not anticipate starting construction until 2027. EERA proposes amending Section 10.1 of the permit to require that Plum Creek report to the Commission on the project status every six months.

10.1 Status Reports

The Permittee shall file status reports with the Commission on progress regarding site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the commencement of site construction and continue until completion of restoration. Reports shall describe construction activities and progress and activities undertaken in compliance with this permit. Reports shall include text and photographs.

[If the Permittee does not commence construction of the Project within six months of permit issuance, the Permittee shall file status reports on the anticipated timing of construction every six months beginning with the issuance of this permit until the pre-construction meeting. The status updates shall include information on the Project's Midcontinent Independent System Operator \(MISO\) interconnection process.](#)

Prevailing Wage (10.6)

Plum Creek proposes to add a new condition, consistent with Minn.Stat216E.03, subd. 10(c), requiring the permittees and its contractors and subcontractors to pay prevailing wage. This is a standard condition in recent site permits and EERA staff supports the proposed amendment.

Decommissioning Plan (11.1)

Plum Creek included a Section 11.1 of the site permit requires the permittee to file an updated decommissioning plan incorporating comments on the draft plan prior to construction. Plum Creek proposes to amend this condition included in the February 2025 SPAR. EERA supports this amendment. EERA will file comments on the draft plan provided as Appendix B of the amendment request in its supplemental comments.

EERA Proposed New Conditions

In addition to EERA's proposed modifications to existing permit conditions, EERA proposes four additional permit conditions.

Department of Natural Resources (DNR) Standard Recommendations

Although there is no DNR comment on the amendment request at this time, EERA staff recommends the site permit be amended to include three conditions in recent permits reflecting DNR recommendations

on using biodegradable netting and mulch products, minimizing lighting impacts at the project substation, and avoiding chloride-based dust control materials. Because these conditions are typical conditions for recently issued site and route permits, the Commission may choose to incorporate them into Section 5 (General Conditions) or, because they are new conditions for this permit, may wish to identify them as special conditions.

Bio-netting, Natural Netting, and Mulch Products

The Permittee shall use only “bio-netting” or “natural netting” types and mulch products without synthetic (plastic) fiber additives.

Project Substation Lighting

The Permittee must use shielded and downward facing lighting and LED lighting that minimizes blue hue at the project substation. Downward facing lighting must be clearly visible on the plan and profile submitted for the project.

Dust Control

The Permittee shall minimize, and avoid, if possible, the use of chloride-based dust control chemicals (i.e., calcium chloride and magnesium chloride).

Documentation of SHPO Consultation and Unanticipated Discoveries Plan

The preservation of archaeological and cultural resources is address in two sections of the existing permit.

- Section 5.3.17 of the site permit is a standard condition requiring that permittees make every effort to avoid impacts to archaeological and historic resources. This condition requires the permittee to avoid impacts to archaeological and historic resources where possible and to mitigate impacts where avoidance is not possible. If previously unidentified archaeological sites are found during construction, the permit requires the permittee to stop construction and contact the Minnesota State Historic Preservation Office (SHPO) to determine how best to proceed. The condition also requires the permittee to stop ground disturbing activity and contact local law enforcement if human remains be discovered.
- Section 6.3 of the site permit is a special condition that requires Plum Creek to complete a Phase 1a archaeological assessment as previously recommended by the SHPO and to conduct a Phase I archaeological survey if recommended based on the results of the Phase 1a survey.

Based on the information included in the SPAR, Plum Creek has updated its review of records from the SHPO and the Minnesota Office of the State Archeologist. Plum Creek indicates its intent to conduct field surveys consistent with standards established by SHPO.¹⁶ However, there is no record in the application indicating recent consultation or coordination with the SHPO, so it’s unclear to EERA staff what recommendations, if any, the SHPO has for the project. EERA recommends that Plum Creek file its correspondence with SHPO since the 2021 application to date in the record. EERA also recommends a

¹⁶ SPAR, p, 47

condition that requires the permittee to file correspondence from SHPO to ensure that SHPO recommendations on mitigation measures, including surveys, are filed in the record.

State Historic Preservation Office Recommendations

The Permittee shall file correspondence from the State Historic Preservation Office (SHPO) containing recommendations for surveys or other mitigation measures related to the Project promptly upon receipt by the Permittees.

EERA also recommends an additional condition requiring Plum Creek to prepare an Unanticipated Discoveries Plan and file that plan with the Commission. The plan clarifies the procedures to be followed if unrecorded archaeological resources or human remains are discovered during construction. This also allows the permittee to clarify the area where the work would stop, acknowledging that work need not stop across the entire site and that workers can be re-deployed elsewhere within the 73,000 acre site.

Unanticipated Discoveries Plan

The Permittee shall develop an Unanticipated Discoveries Plan (UDP) to identify guidelines to be used in the event previously unrecorded archeological or historic properties, or human remains, are encountered during construction, or if unanticipated effects to previously identified archaeological or historic properties occur during construction. This is in addition to and not in lieu of any other obligations that may exist under law or regulation relating to these matters. The UDP shall describe how previously unrecorded, non-human burial, archaeological sites found during construction shall be marked and all construction work must stop at the discovery location. The Permittee shall file the UDP with the Commission at least 14 days prior to the preconstruction meeting.

EERA has recommended this condition, and this, or a similar condition has been included in several recent permits issued by the Commission.¹⁷

Route Permit Amendment

Plum Creek reviewed options to adjust the permitted route to reduce costs. Plum Creek identified its “Preferred Route Segment” to minimize costs and, potentially, the overall impacts of the proposed route. EERA staff refers to this segment as the “proposed route segment” to avoid indicating a preference between segments. The proposed route segment identified in the amendment request

¹⁷ Commission, *Order Issuing Site Permit in the Matter of the Application of Northern States Power Co. d/b/a Xcel Energy for a Site Permit for the up to 250 MW Sherco 3 Solar Energy Generating System in Sherburne County, Minnesota*, July 31, 2024, eDocket ID: [20247-209139-01](#) p. 15 of Site Permit; Commission, *Order Granting Certificate of Need, Issuing Site Permit, and Issuing Route Permit In the Matter of the Application of Dodge County Wind, LLC for a Certificate of Need, a Site Permit, and a Route Permit for the up to 252 MW Large Wind Energy Conversion System and Associated 161 kV Transmission Line in Dodge, Mower, and Steele Counties, Minnesota*, June 4, 2024, eDocket ID: [20246-207396-02](#)

shortens the overall length of the transmission line by 3.4 miles and reduces the number of turns, which reduces procurement and construction costs.¹⁸

Comparison of Route Segments

Human Settlement

Neither the proposed nor the permitted route segments will result in displacement. There are fewer residences within the 1,000 foot requested route width of the proposed segment (two) compared to the permitted route segment. The distance between the proposed alignment and the nearest residence is greater in the proposed segment (250 feet) than in the permitted segment (184 feet).¹⁹

Aesthetic impacts are anticipated to be similar for both the proposed and permitted segments, as Plum Creek does not propose to change the structures from those proposed in the 2019 route permit application.²⁰ Construction noise is anticipated to be somewhat less for the proposed route segment than the permitted route segment, due to a longer distance from the edge of the anticipated right-of-way.²¹ The proposed segment does not differ from the permitted segment with respect to socioeconomic, cultural resource, or recreational impacts and neither segment is located within an environmental justice community.²²

Landcover along the permitted segment is largely a mixture of cultivated cropland (64 percent) and developed areas (34 percent), while the landcover along the proposed segment is predominantly cultivated agriculture (87 percent), with less developed area (13 percent).²³ The difference in landcover is primarily related to the location differences between the segments, with the permitted segment located largely parallel to roads and the proposed segment located largely along half-section lines. Both route segments are located in areas zoned as agriculture in Redwood and Cottonwood counties, but the permitted route also crosses some parcels zoned as "Residential – Single Unit."²⁴ Neither segment will substantially affect existing land uses.

Impacts to public services are expected to be minimal for both segments. The proposed segment parallels roads for approximately 0.9 miles, or 22 percent of its 4.1 mile length, while the permitted segment parallels roads for approximately 5.2 miles, or 69 percent of its 7.5 mile length.²⁵

¹⁸ RPAR, Section 1, p. 2, RPAR, Section 3.6, Table 3.6.1, pp. 7-8

¹⁹ RPAR, Section 4.4.2, p. 12

²⁰ RPAR, Section 4.2.5, pp. 14-15.

²¹ RPAR, Section 4.2.4, pp. 13-14

²² RPAR, Sections 4.2.6, 4.2.7, and 4.2.8, pp. 15 - 18

²³ RPAR, Section 4.9.1, pp. 19-20

²⁴ RPAR, Section 4.9.2, p. 20

²⁵ RPAR, Section 4.2.12, pp. 23-24

EERA staff finds Plum Creek’s description of right-of-way acquisition along the proposed segment unclear. Plum Creek proposes a 150-foot right-of-way, 75 feet either side of the transmission line.²⁶ Section 3.8 of the route permit application request (RPAR) refers to 14 landowner groups along the proposed route segment and indicates that the segment will require full transmission easements from seven landowner groups and overhang easements from an additional seven landowner groups. Plum Creek indicates that it has signed full transmission easement agreements with six landowner groups and overhang easements with five landowner groups. Plum Creek indicates that at the time of the request it was in final negotiations for full easement with one landowner and was in negotiations for overhang agreement with two landowner groups. Appendix D identifies 24 landowners within the proposed route segment. EERA staff recommends that Plum Creek provide additional information on right-of-way acquisition to clarify the record.

Land Based Economies

Both segments are located primarily in cultivated cropland. Based on preliminary design, Plum Creek anticipates both alternatives would have a total impact on cultivated cropland of approximately 0.1 acres, but the proposed segment would have one fewer structure (24) located in cropland than the permitted segment (25). There are two parcels enrolled in the Conservation Reserve Enhancement Program within the 1,000 foot route width of the proposed segment, but Plum Creek indicates that the segment right-of-way avoids these parcels. The request indicated Plum Creek’s willingness to coordinate with the Minnesota Department of Agriculture to develop an agricultural impact mitigation plan, although such a plan is not required under the existing permit.²⁷ EERA staff defers to the Minnesota Department of Agriculture on the need for an agricultural impact mitigation plan.

Neither the proposed nor the permitted segment would impact forestry or mining operations, and neither segment would impact tourism resources.²⁸

Archaeological and Historic Resources

Based on a review of state records, there are no recorded archaeological or historic sites within the anticipated right-of-way of the proposed segment. Plum Creek indicates that, based on the literature search and coordination with the Minnesota State Historic Preservation Office (SHPO), it intends to conduct field surveys in high potential areas along the proposed route following approval of the amendment. Although Plum Creek indicates that it has been in coordination with SHPO, the RPAR does not include correspondence with the SHPO, so SHPO’s recommendation is unclear.²⁹

Natural Resources

DNR records indicate that a site of biodiversity significance and three native plant communities, all Dry Hill Prairie (southern) Type are located within the route width, and one is located within the ROW of the

²⁶ RPAR, Section 4.0, p. 9

²⁷ RPAR, Section 4.3.1, pp. 25-28

²⁸ RPAR, Section 4.3.2- 4.3.4, pp. 28-29

²⁹ RPAR, Appendix F

proposed segment in Section 6 of Ann Township.³⁰ Plum Creek has indicated that it intends to avoid these resources during construction and maintenance. Correspondence with the DNR indicates that DNR's primary concern in this area is with maintenance activities. DNR recommends:

- Surveying all mapped native plant communities for state-listed species.
- Limit vegetation clearing.
- Restricting herbicide use to spot treatments.
- DNR review of seed mixes used on or adjacent to the site.
- Habitats with state-protected species may require a large buffer distance from herbicide use
- The cut and scatter method of cutting understory trees, branches, and brush and scattering them across the site should not be used in sensitive habitats like native prairie where the cleared vegetation consists of invasive species. Brush in these communities should be piled, burned, or removed from the site.³¹

EERA recommends the route permit be amended to include a special condition requiring Plum Creek survey the route width in Section 6 of Ann Township (T 108N, R 38W) and develop a mitigation plan in this area in cooperation with the DNR.

Existing Permit Conditions

Permit Cover

Plum Creek proposes to amend the cover of the permit describe the route length with the proposed segment replacing the permitted segment, and to update the date of the permit. EERA staff supports these changes.

Route Permit (1)

Plum Creek proposes to replace the description of the route from the 31 mile route in the 2021 permit with the 28 mile route length with the proposed segment replacing the permitted segment. EERA staff supports this amendment.

Project Location (2.1)

If the Commission approves the amendment request, the project location must be changed to replace the location of the permitted segment with the location of the proposed segment EERA staff supports Plum Creek's proposed amendment to the project location table in Section 2.1 of the route permit.

Substations and Associated Facilities (2.2)

Plum Creek proposes to amend this section of the permit to incorporate the "Revised Collector Substation 1." EERA staff does not believe this amendment is necessary as no "Collector Substation 1" has yet been constructed.

³⁰ RPAR, Section 4.5.8, p, 49, Map 8, and Appendix F

³¹ RPAR, Appendix F

In routing cases where the Commission considers multiple routes or substation locations, once the Commission makes its determination on the route, the designation that has been used to differentiate between options (for example, “red route”) goes away. In this case, if the Commission approves the amended route, the permit need not reference a revised substation, it simply Collector Substation 1 and will be labeled as such on the route maps and reconstruction filings.

Designated Route (3)

Plum Creek proposes to amend this section of the permit to revise the route description consistent with the replacement of the permitted segment with the proposed segment. EERA staff supports this amendment.

Independent Third Party Monitoring (5.3.3)

Plum Creek proposes a new condition requiring independent monitoring of construction of the project. This requirement is a standard condition in more recent permits, and EERA supports its inclusion here.

EERA Proposed New Conditions

In addition to the modifications proposed above, EERA staff recommends five new permit conditions for the route permit.

DNR Standard Recommendations

Consistent with its recommendations on the site permit, EERA recommends the route permit include typical conditions in recent permits reflecting DNR recommendations on using biodegradable netting and mulch products and avoiding chloride-based dust control materials. Because the collector substations are included in the site permit, EERA staff does not believe that the condition requiring the permittee to minimize lighting impacts at the substations is necessary.

Because these conditions are typical conditions for both site and route permits, the Commission may choose to incorporate them into Section 5 (General Conditions) or, because they are new conditions, may wish to identify them as special conditions.

Bio-netting, Natural Netting, and Mulch Products

The Permittee shall use only “bio-netting” or “natural netting” types and mulch products without synthetic (plastic) fiber additives.

Dust Control

The Permittee shall minimize, and avoid, if possible, the use of chloride-based dust control chemicals (i.e., calcium chloride and magnesium chloride).

Documentation of SHPO Consultation and Unanticipated Discoveries Plan

Consistent with its recommendations on the site permit, EERA staff recommends a condition that requires the permittee to file correspondence from SHPO to ensure that SHPO recommendations on mitigation measures, including surveys, are filed in the record.

State Historic Preservation Office Recommendations

The Permittee shall file correspondence from the State Historic Preservation Office (SHPO) containing recommendations for surveys or other mitigation measures related to the Project promptly upon receipt by the Permittees.

EERA staff also recommends that the route permit include a requirement that Plum Creek prepare a unanticipated discoveries plan to identify reporting and mitigation measures if a previously unrecorded archaeological or historic property or human remains are encountered during construction.

Unanticipated Discoveries Plan

The Permittee shall develop an Unanticipated Discoveries Plan (UDP) to identify guidelines to be used in the event previously unrecorded archeological or historic properties, or human remains, are encountered during construction, or if unanticipated effects to previously identified archaeological or historic properties occur during construction. This is in addition to and not in lieu of any other obligations that may exist under law or regulation relating to these matters. The UDP shall describe how previously unrecorded, non-human burial, archaeological sites found during construction shall be marked and all construction work must stop at the discovery location. The Permittee shall file the UDP with the Commission at least 14 days prior to the preconstruction meeting.

Because these conditions are typical conditions for both site and route permits, the Commission may choose to incorporate them into Section 5 (General Conditions) or, because they are new conditions for this permit, may wish to identify them as special conditions.

Native Plant Communities

EERA staff also recommend the route permit be amended to include a special condition requiring Plum Creek survey the route width in Section 6 of Ann Township (T 108N, R 38W) and develop a mitigation plan in this area in cooperation with the DNR. EERA proposes the following condition:

Native Plant Communities

The permittee shall survey the anticipated right-of-way of the permitted route in Section 6 of Ann Township (T108N, R38W) and shall develop a mitigation plan in cooperation with the Minnesota Department of Natural Resources to avoid, minimize, and mitigate potential impacts to native plant communities and to sites of biodiversity significance during construction and operation of the transmission line.

EERA Staff Recommendations

EERA staff recommends that Plum Creek provide additional information to clarify the record. EERA staff also summarizes its recommendation with respect to amendments to the site and route permits.

EERA Recommendations for Additional Information

EERA recommends that Plum Creek provide the following additional information in a supplemental filing:

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- A. **Correspondence with SHPO:** EERA staff recommends that Plum Creek provide its recent correspondence with the SHPO regarding both the site and route.
- B. **Manufacturer's Cut-In Speed:** EERA staff recommends Plum Creek provide the manufacturer's standard cut-in speed for all turbine models proposed.
- C. **Turbine Access Roads:** EERA recommends that Plum Creek clarify the intent of its amendments to section 5.3.15 of the permit regarding turbine access roads.
- D. **Information on Right-of-Way Acquisition:** EERA staff recommends that Plum Creek provide additional information on right-of-way acquisition to clarify the record. Specifically, EERA recommends that Plum Creek clarify:
- 1) The distinction between "full transmission easements" and "overhang transmission easements."
 - 2) The distinction between (a) landowner and landowner group and (b) the 14 landowner groups discussed in Section 3.8 and the 24 landowners identified in Appendix C as being within the proposed route segment.
 - 3) The status of right-of-way acquisition in text along with a map showing the anticipated alignment overlaid on parcel boundaries and indicating the type of easement agreement (full or overhang) and the status of easements (executed or in negotiation).
 - 4) Whether Plum Creek will consider using eminent domain if it is unable to reach agreement with landowners.

Recommendations on Wind Permit Amendment and Conditions

EERA staff has reviewed Plum Creek's site permit amendment request and supporting materials and believes the anticipated environmental and human impacts associated with the change in turbine technology, modifications to the layout, move of the substation, including a change in location of certain infrastructure, appear to be comparable, or less than, the potential impacts associated with the originally permitted wind turbine models and turbine and infrastructure layouts.

With respect to amendments to the permit, EERA recommends the Commission:

- A. Adopt Plum Creek's amendments to the following sections:
- Permit Cover
 - 2.1, Associated Facilities
 - 5, Construction and Operation Practices
 - 5.4, Independent Third Party Monitor
 - 5.3.17, Archaeological and Historic Resources
 - 8.2, Power Purchase Agreement
 - 8.3, Failure to Commence Construction
 - 10.6 Prevailing Wages

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- 11.1 Decommissioning Plan
- B. Adopt Plum Creeks proposed amendments with the additional modifications proposed by EERA in:
- 2, Project Description
 - 3, Designated Site
- C. Adopt Plum Creek’s amendments to Section 4.9 of the site to include information on the turbine cut-in speed once it receives that information from Plum Creek. permit
- D. Adopt EERA staff’s proposed amendments to the following sections:
- 5.3.15, Turbine Access Roads
 - 10.1 Status Reports
 - New permit condition on biodegradable netting and mulch products.
 - New permit condition on substation lighting.
 - New permit condition requiring non-chloride based dust control methods.
 - New permit condition requiring that SHPO recommendations be filed in the record.
 - New permit condition requiring an unanticipated discoveries plan.

Recommendation on Route Permit Amendment Request

EERA staff has reviewed Plum Creek’s route permit amendment request and supporting materials and believes the anticipated environmental and human impacts associated with proposed route segment appear to be comparable to and, in some cases less than, the potential impacts associated with the permitted route segment.

With respect to amendments to the route permit, EERA recommends the Commission:

- A. Adopt Plum Creek’s amendments to the following sections:
- Permit Cover
 - Route Permit (1)
 - Project Location (2.1)
 - Designated Route (3)
 - Independent Third Party Monitoring (5.3.3)

EERA staff does not believe that Plum Creek’s proposed amendment to Section 2.2 is necessary and does not recommend amending this section of the permit.

- B. Adopt EERA staff’s proposed new conditions:
- New permit condition on biodegradable netting and mulch products.

- New permit condition requiring non-chloride based dust control methods.
- New permit condition requiring that SHPO recommendations be filed in the record.
- New permit condition requiring an unanticipated discoveries plan.
- New permit condition requiring Plum Creek to survey the route width in Section 6 of Ann Township and develop a mitigation plan in cooperation with the DNR that addresses construction and operation of the transmission line through this area.