**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

**ROUTE PERMIT FOR A**
**HIGH-VOLTAGE TRANSMISSION LINE AND ASSOCIATED FACILITIES**

**IN**
**COTTONWOOD, MURRAY, AND REDWOOD COUNTIES**

**ISSUED TO**
**PLUM CREEK WIND FARM, LLC**

**PUC DOCKET NO. IP-6997/TL-18-701**

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850 this route permit is hereby issued to:

**Plum Creek Wind Farm, LLC**

Plum Creek Wind Farm, LLC is authorized by this route permit to construct and operate a new 31-mile single-circuit 345 kilovolt (kV) transmission line between a new collector substation in Ann Township, Cottonwood County and a new switching station in Vesta Township, Redwood County.

The high-voltage transmission line and associated facilities shall be built within the route identified in this permit and as portrayed on the route maps and in compliance with the conditions specified in this permit.

Approved and adopted this 23rd day of September, 2021

BY ORDER OF THE COMMISSION

Will Seuffert,
Executive Secretary

**CONTENTS**

**ATTACHMENTS**

# 1 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this route permit to Plum Creek Wind Farm, LLC (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This permit authorizes the Permittee to construct and operate a new approximately 31-mile 345 kV single-circuit high-voltage transmission line in Cottonwood and Redwood counties, and as identified in the attached Route Maps, hereby incorporated into this document as Attachment 3.

## 1.1 Pre-emption

Pursuant to Minn. Stat. § 216E.10, this permit shall be the sole route approval required to be obtained by the Permittee for construction of the transmission facilities and this permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose governments.

# 2 PROJECT DESCRIPTION

The 345 kV transmission line authorized by this permit is directly associated with the Plum Creek Wind Facility (PUC Docket No. IP-6997/WS-18-700). The transmission line connects the wind facilities' two collector substations to the existing Brookings-to-Hampton 345 kV transmission line via a new switching station.

## 2.1 Project Location

| County | Township Name | Township | Range | Section |
|---|---|---|---|---|
| Murray | Holly | 108N | 38W | 13, 24 |
| Cottonwood | Ann | 108N | 38W | 3-5, 8-10, 15-20 |
| Redwood | North Hero | 109N | 38W | 3-4, 9-10, 15-16, 20-22, 27-29, 32-33 |
| | Johnsonville | 110N | 38W | 3-4, 9-10, 15-16, 21-22, 27-28, 33-34 |
| | Granite Rock | 111N | 38W | 4-5, 8-9, 16-17, 20-22, 27-29, 33-34 |
| | Vesta | 112N | 38W | 32-33 |

## 2.2 Substations and Associated Facilities

The project includes two collector substations (Collector Substation 1 and Collector Substation 2) that will require approximately 10 acres of land each within the project area. The project also includes an operation and maintenance building that will be located adjacent to Collector Substation 2.

### 2.3 Structures and Conductors

The table below details specifics on the various structure and conductor types as presented in the route permit application.

| Structure Type | Material | Height (feet) | Base (inches) | Foundation (feet) | Span (feet) |
|---|---|---|---|---|---|
| Tangent | Steel | 125 | 80 | N/A | 650 |
| Small Angle | Steel | 120 | 80 | 8 | 650 |
| Heavy Angle | Steel | 115 | 80 | 9 | 650 |
| Dead End | Steel | 110 | 80 | 9 | 650 |

The conductors for the transmission line will consist of either 2-bundled "Cardinal" (954 kcmil) or 2-bundled "Bittern" (1,272 kcmil) Aluminum Conductor Steel Reinforced cables, or cables with comparable capacity. The 345-kV conductors will have a capacity equal or greater to 1,992 amperes.

## 3 DESIGNATED ROUTE

The route designated by the Commission in this permit is the route described below and shown on the Route Maps in Attachment 3 of this permit. The route width approved by this permit is 1,000 feet (500 feet on each side of the centerline) with the exception of an area in the southeast quarter of Section 33 in Johnsonville Township where the route is expanded an additional 2,500 feet to the west. The route is generally described as follows:

> *From Collector Substation 2 (northeast corner of 240th Street and 300th Avenue) the route proceeds north along 300th Avenue for one mile before turning east along 230th Street for one mile. The route then turns north along County Highway 7 for about 0.75 mile before turning east for 0.5 mile, then south again for 0.25 mile along the field edge. The route then turns east again and follows parcel boundaries for 1.5 miles. At this point, the route crosses 340th Avenue, turns north and parallels the east side of the road for 0.5 mile before reaching Collector Substation 1 (northeast corner of 220th Street and 340th Avenue). From Collector Substation 1, the route follows 340th Avenue north for one mile before turning west on 210th Street for one mile. The route turns north again at 330th Avenue for one mile before turning west for half mile to Eagle Avenue. The route follows Eagle Avenue north for two miles to U.S. Highway 14 and then turns east for one mile to*

*County Highway 10. The route turns north on County Highway 10 for six miles to 160th Street where the route turns west for half mile to a private driveway on the north side of the road. The route then follows the private driveway for one quarter of a mile before turning back east along the field edge for half mile to County Highway 10. The route follows County Highway 1 north for 1.75 miles to 180th Street. At 180th Street, the route turns west for one quarter of a mile, then north along a parcel line for half mile, before turning back east for one quarter of a mile to County Highway 10. At County Highway 10, the route turns north again for 1.5 miles to 200th Street where the route turns west for half mile before following a parcel line/field edge north for two miles to 220th Street. The route turns east for half mile on 220th Street back to County Highway 10 and continues north for two more miles to Minnesota Highway 68 where the route turns west for one mile. The route then turns north along Eagle Avenue for the final four miles before reaching the Switching Station.*

The final alignment must be located within this designated route. The route widths identified on the attached route maps provide the Permittee with flexibility for minor adjustments of the alignment or right-of-way to accommodate landowner requests and unforeseen conditions. The final alignment (*i.e.*, permanent and maintained rights-of-way) will be located within this designated route unless otherwise authorized by this permit or the Commission.

## 4 RIGHT-OF-WAY

This Permit authorizes the Permittee to obtain a new permanent right-of-way for the transmission line up to 150 feet in width. The permanent right-of-way is typically 75 feet on both sides of the transmission line measured from its centerline.

The Project's anticipated alignment is intended to minimize potential impacts relative to criteria identified in Minn. R. 7850.4100. The actual right-of-way will generally conform to the anticipated alignment identified on the Route Maps unless changes are requested by individual landowners and agreed to by the Permittee or for unforeseen conditions that are encountered or as otherwise provided for by this permit.

Any right-of-way modifications within the designated route shall be located so as to have comparable overall impacts relative to the factors in Minn. R. 7850.4100, as does the right-of-way identified in this permit, and shall be specifically identified and documented in and approved as part of the plan and profile submitted pursuant to Section 9.1 of this permit.

Where the transmission line parallels existing highway and other road rights-of-way, the transmission line right-of-way shall occupy and utilize the existing right-of-way to the maximum extent possible; consistent with the criteria in Minn. R. 7850.4100 and the other requirements

of this permit; and for highways under the jurisdiction of the Minnesota Department of Transportation (MnDOT), the procedures for accommodating utilities in trunk highway rights-of-way.

### 4.1 Route Width Variations

Route width variations may be allowed to accommodate the potential site-specific constraints listed below. These constraints may arise from any of the following:

1. Unforeseen circumstances encountered during the detailed engineering and design process.
2. Federal or state agency requirements.
3. Existing infrastructure within the route, including but not limited to railroads, natural gas and liquid pipelines, high voltage electric transmission lines, or sewer and water lines.

Any alignment modifications arising from these site-specific constraints that would result in right-of-way placement outside of the designated route shall be specifically reviewed by the Commission under Minn. R. 7850.4900.

## 5 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the transmission line and associated facilities over the life of this permit.

### 5.1 Permit Distribution

Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this route permit and complaint procedures less than five days prior to the start of construction on their property. An affected landowner is any landowner or designee that is within or adjacent to the permitted route.

At the time of first contact, the Permittee shall also provide all affected landowners with a copy of the Minnesota Department of Commerce's Rights-of-Way and Easements for Energy Facility Construction and Operation fact sheet.[1]

[1] https://apps.commerce.state.mn.us/eera/web/project-file?legacyPath=/opt/documents/Easements%20Fact%20Sheet_08.05.14.pdf

### 5.2 Access to Property

The Permittee shall notify landowners or their designee at least 14 days in advance but not greater than 60 days in advance of entering the property.

### 5.3 Construction and Operation Practices

The Permittee shall follow those specific construction practices and material specifications described in its *November 2019 Route Permit Application for a 345 kV Transmission Line* and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

#### 5.3.1 Field Representative

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to commencing construction. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commencing construction. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### 5.3.2 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform and educate all employees, contractors, and other persons involved in the construction and ongoing operation of the transmission line of the terms and conditions of this permit.

#### 5.3.3 Public Services, Public Utilities, and Existing Easements

During construction, the Permittee shall minimize any disruption to public services or public utilities. To the extent disruptions to public services or public utilities occur these will be temporary, and the Permittee will restore service promptly. Where any impacts to utilities have the potential to occur the Permittee will work with both landowners and local agencies to determine the most appropriate transmission structure placement.

The Permittee shall consult with landowners, townships, cities, and counties along the route and consider concerns regarding tree clearing, distance from existing structures, drain tiles, pole depth and placement in relationship to existing roads and road expansion plans.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction.

#### 5.3.4 Temporary Workspace

The Permittee shall limit temporary easements to special construction access needs and additional staging or lay-down areas required outside of the authorized right-of-way. Temporary space shall be selected to limit the removal and impacts to vegetation. Temporary easements outside of the authorized transmission line right-of-way will be obtained from affected landowners through rental agreements and are not provided for in this permit.

Temporary driveways may be constructed between the roadway and the structures to minimize impact using the shortest route possible. Construction mats should be used to minimize impacts on access paths and construction areas.

#### 5.3.5 Noise

The Permittee shall comply with noise standards established under Minn. R. 7030.0010 to 7030.0080. Construction and maintenance activities shall be limited to daytime working hours to the extent practicable to ensure nighttime noise level standards will not be exceeded.

#### 5.3.6 Aesthetics

The Permittee shall consider input pertaining to visual impacts from landowners or land management agencies prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance. Care shall be used to preserve the natural landscape, minimize tree removal, and prevent any unnecessary destruction of the natural surroundings in the vicinity of the project during construction and maintenance. The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads. Structures shall be placed at a distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highways, or trail crossings.

### 5.3.7 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

In accordance with MPCA requirements, the Permittee shall obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater permit.

### 5.3.8 Wetlands and Water Resources

Wetland impact avoidance measures that shall be implemented during design and construction of the transmission line will include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, construction in wetland areas shall occur during frozen ground conditions where practicable and shall be according to permit requirements by the applicable permitting authority. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and not placed back into the wetland or riparian area. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. No staging or stringing set up areas shall be placed within or adjacent to wetlands or water resources, as practicable. Power pole structures shall be assembled on upland areas before they are brought to the site for installation.

Areas disturbed by construction activities shall be restored to pre-construction conditions. Restoration of the wetlands will be performed by the Permittee in accordance with the requirements of applicable state and federal permits or laws and landowner agreements.

All requirements of the U.S. Army Corps of Engineers (USACE) (wetlands under federal jurisdiction), Minnesota Department of Natural Resources (DNR) (Public Waters/Wetlands), and

County (wetlands under the jurisdiction of the Minnesota Wetland Conservation Act) shall be met.

### 5.3.9 Vegetation Management

The Permittee shall minimize the number of trees to be removed in selecting the right-of-way specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation in areas such as trail and stream crossings where vegetative screening may minimize aesthetic impacts, to the extent that such actions do not violate sound engineering principles or system reliability criteria.

Tall growing species located within the transmission line right-of-way that endanger the safe and reliable operation of the transmission facility will be removed by the Permittee. The Permittee shall leave undisturbed, to the extent possible, existing low growing species in the right-of-way or replant such species in the right-of-way to blend the difference between the right-of-way and adjacent areas, to the extent that the low growing vegetation that will not pose a threat to the transmission facility or impede construction.

### 5.3.10 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture (MDA), DNR, and the U.S. Environmental Protection Agency (EPA). Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

### 5.3.11 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 30 days prior to commencing construction.

### 5.3.12 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee shall select site appropriate seed certified to be free of noxious weeds. To the extent possible, the Permittee shall use native seed mixes. The Permittee shall consult with landowners on the selection and use of seed for replanting.

### 5.3.13 Roads

The Permittee shall advise the appropriate governing bodies having jurisdiction over all state, county, city, or township roads that will be used during the construction phase of the project. Where practical, existing roadways shall be used for all activities associated with construction of the facility. Oversize or overweight loads associated with the facility shall not be hauled across public roads without required permits and approvals.

The Permittee shall construct the least number of site access roads it can. Access roads shall not be constructed across streams and drainage ways without the required permits and approvals. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when accessing construction workspace, unless otherwise negotiated with the affected landowner.

### 5.3.14 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the transmission facility. In the event that a resource is encountered, the Permittee shall contact and consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement or the State Archaeologist.

### 5.3.15 Avian Protection

The Permittee in cooperation with the DNR shall identify areas of the project where bird flight diverters will be incorporated into the transmission line design to prevent large avian collisions attributed to visibility issues. Standard transmission design shall incorporate adequate spacing of conductors and grounding devices in accordance with Avian Power Line Interaction Committee standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices.

### 5.3.16 Restoration

The Permittee shall restore the right-of-way, temporary workspaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the transmission line. Restoration within the right-of-way must be compatible with the safe operation, maintenance, and inspection of the transmission line. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

### 5.3.17 Cleanup

All waste and scrap that is the product of construction shall be removed from the right-of-way and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

### 5.3.18 Pollution and Hazardous Wastes

All appropriate precautions to protect against pollution of the environment must be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during construction and restoration of the right-of-way.

### 5.3.19 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

## 5.4 Electrical Performance Standards

### 5.4.1 Grounding

The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any non-stationary object within the right-of-way, including but not limited to large motor vehicles and agricultural equipment. All fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.

### 5.4.2 Electric Field

The transmission line shall be designed, constructed, and operated in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms.

### 5.4.3 Interference with Communication Devices

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the transmission line, the Permittee shall take whatever action is necessary to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the line.

## 5.5 Other Requirements

### 5.5.1 Safety Codes and Design Requirements

The transmission line and associated facilities shall be designed to meet or exceed all relevant local and state codes, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. This includes standards relating to clearances to ground, clearance to crossing utilities, clearance to buildings, strength of materials, clearances over roadways, right-of-way widths, and permit requirements.

### 5.5.2 Other Permits and Regulations

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. The Permittee shall submit a copy of such permits to the Commission upon request.

## 6 SPECIAL CONDITIONS

No special conditions have been identified for the high-voltage transmission line.

## 7 DELAY IN CONSTRUCTION

If the Permittee has not commenced construction or improvement of the route within four years after the date of issuance of this permit the Permittee shall file a report on the failure to construct and the Commission shall consider suspension of the permit in accordance with Minn. R. 7850.4700.

## 8 COMPLAINT PROCEDURES

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this permit.

Upon request, the Permittee shall assist the Commission with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

## 9 COMPLIANCE REQUIREMENTS

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission.

### 9.1 Plan and Profile

At least 30 days before right-of-way preparation for construction begins on any segment or portion of the project, the Permittee shall provide the Commission with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction,

structure specifications and locations, cleanup, and restoration for the transmission line. The documentation shall include maps depicting the plan and profile including the right-of-way, alignment, and structures in relation to the route and alignment approved per this permit.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes in its plan and profile or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

### 9.2 Status Reports

The Permittee shall report to the Commission on progress during finalization of the route, design of structures, and construction of the transmission line. The Permittee need not report more frequently than monthly. Reports shall begin with the submittal of the plan and profile for the project and continue until completion of restoration.

### 9.3 Notification to Commission

At least three days before the line is to be placed into service, the Permittee shall notify the Commission of the date on which the line will be placed into service and the date on which construction was complete.

### 9.4 As-Builts

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

### 9.5 GPS Data

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the transmission line and each substation connected.

## 10 PERMIT AMENDMENT

This permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in

writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

## 11 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer.

The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required.

## 12 REVOCATION OR SUSPENSION OF THE PERMIT

The Commission may initiate action to revoke or suspend this permit at any time. The Commission shall act in accordance with the requirements of Minn. R. 7850.5100, to revoke or suspend the permit.

**ATTACHMENT 1**

Complaint Handling Procedures for Permitted Energy Facilities

**MINNESOTA PUBLIC UTILITIES COMMISSION**
**COMPLAINT HANDLING PROCEDURES FOR**
**PERMITTED ENERGY FACILITIES**

## A. Purpose

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site or route preparation, construction, cleanup, restoration, operation, and maintenance.

## B. Scope

This document describes complaint reporting procedures and frequency.

## C. Applicability

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

## D. Definitions

**Complaint:** A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site or route preparation, cleanup or restoration, or other permit conditions. Complaints do not include requests, inquiries, questions or general comments.

**Substantial Complaint:** A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

**Unresolved Complaint:** A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

**Person:** An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private; however organized.

## E. Complaint Documentation and Processing

1. The permittee shall designate a representative responsible for filing complaints to the Commission's eDocket system. This person's name, phone number and email address shall accompany all complaint submittals. The name and contact information for the representative shall be kept current in eDockets.

2. A person presenting the complaint should, to the extent possible, include the following information in their communications:

    a. name, address, phone number, and email address;
    b. initial date of the complaint;
    c. tract, parcel number, or address of the complaint;
    d. a summary of the complaint; and
    e. whether the complaint relates to a permit violation, a construction practice issue, or other type of complaint.

3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:

    a. docket number and project name;
    b. name of complainant, address, phone number and email address;
    c. precise description of property or parcel number;
    d. name of permittee representative receiving complaint and date of receipt;
    e. nature of complaint and the applicable permit condition(s);
    f. summary of activities undertaken to resolve the complaint; and
    g. a statement on the final disposition of the complaint.

## F. Reporting Requirements

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit, unless otherwise required below. The permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Public Advisor at 1-800-657-3782 (voice messages are acceptable) or publicadvisor.puc@state.mn.us. For e-mail reporting, the email subject line should read "PUC EFP Complaint" and include the appropriate project docket number.

**Monthly Reports:** During project construction, restoration, and operation, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Will Seuffert, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at: https://www.edockets.state.mn.us/EFiling/home.jsp. If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

If a project has submitted twelve consecutive months of complaint reports with no complaints, monthly reports can terminate by a letter to eDockets notifying the Commission of such action. If a substantial complaint is received (by the company or the Commission) following termination of the monthly complaint report, as noted above, the monthly reporting should commence for a period of one year following the most recent complaint or upon resolution of all pending complaints.

If a permittee is found to be in violation of this section, the Commission may reinstate monthly complaint reporting for the remaining permit term or enact some other commensurate requirement via notification by the Executive Secretary or some other action as decided by the Commission.

## G. Complaints Received by the Commission

Complaints received directly by the Commission from aggrieved persons regarding the permit or issues related to site or route preparation, construction, cleanup, restoration, or operation and maintenance will be promptly sent to the permittee.

The permittee shall notify the Commission when the issue has been resolved. The permittee will add the complaint to the monthly reports of all complaints. If the permittee is unable to find resolution, the Commission will use the process outlined in the Unresolved Complaints Section to process the issue.

## H. Commission Process for Unresolved Complaints

Complaints raising substantial and unresolved permit issues will be investigated by the Commission. Staff will notify the permittee and appropriate persons if it determines that the complaint is a substantial complaint. With respect to such complaints, the permittee and complainant shall be required to submit a written summary of the complaint and its current position on the issues to the Commission. Staff will set a deadline for comments. As necessary, the complaint will be presented to the Commission for consideration.

## I. Permittee Contacts for Complaints and Complaint Reporting

Complaints may be filed by mail or email to the permittee's designated complaint representative, or to the Commission's Public Advisor at 1-800-657-3782 or publicadvisor.puc@state.mn.us. The name and contact information for the permittee's designated complaint representative shall be kept current in the Commission's eDocket system.

**ATTACHMENT 2**

Compliance Filing Procedures for Permitted Energy Facilities

**MINNESOTA PUBLIC UTILITIES COMMISSION**
**COMPLIANCE FILING PROCEDURE FOR**
**PERMITTED ENERGY FACILITIES**

## A. Purpose

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

## B. Scope and Applicability

This procedure encompasses all known compliance filings required by permit.

## C. Definitions

**Compliance Filing:** A filing of information to the Commission, where the information is required by a Commission site or route permit.

## D. Responsibilities

1. The permittee shall file all compliance filings with Will Seuffert, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at: https://www.edockets.state.mn.us/EFiling/home.jsp

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:

    a. Date
    b. Name of submitter/permittee
    c. Type of permit (site or route)
    d. Project location
    e. Project docket number
    f. Permit section under which the filing is made
    g. Short description of the filing

3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Will Seuffert, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

The Commission may request a paper copy of any electronically filed document.

**PERMIT COMPLIANCE FILINGS**[1]

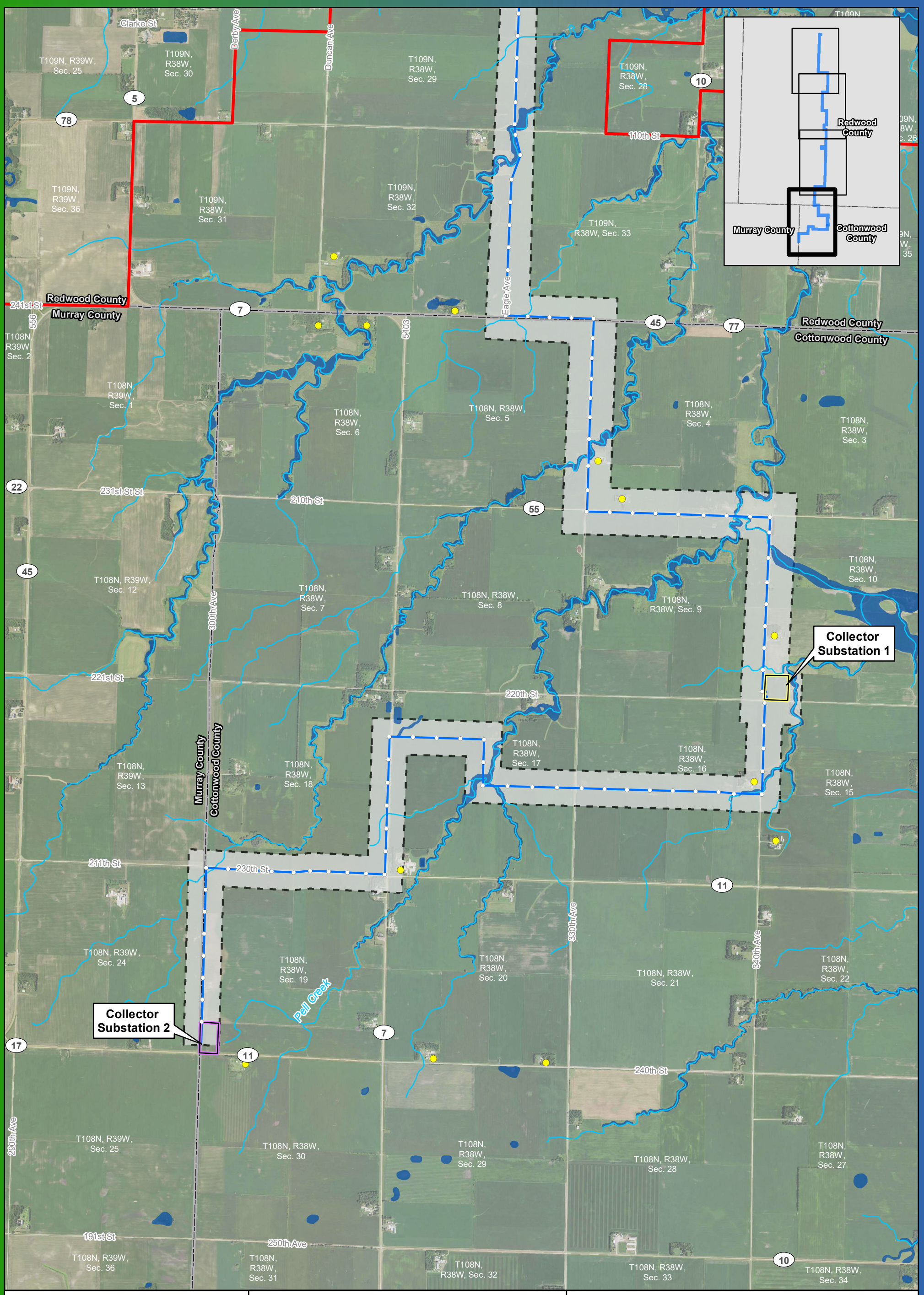
PERMITTEE: Plum Creek Wind Farm, LLC
PERMIT TYPE: High-Voltage Transmission Line Route Permit
PROJECT LOCATION: Cottonwood and Redwood Counties
PUC DOCKET NUMBER: IP6997/WS-18-701

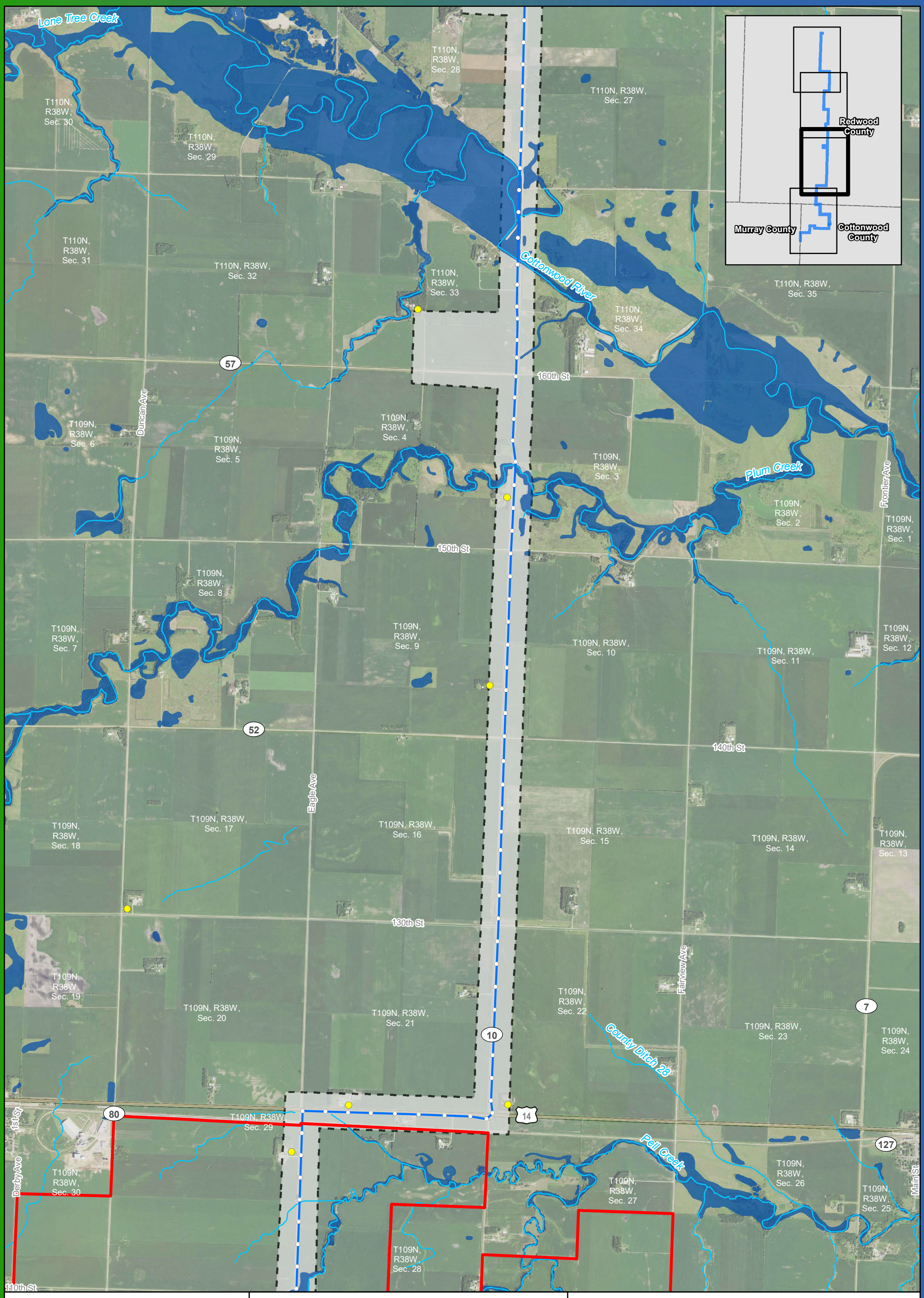
| Filing Number | Permit Section | Description of Compliance Filing | Due Date |
|---|---|---|---|
| | 5.1 | Permit Issuance | 30 days after permit issuance |
| | 5.3.1 | Field Representative | 14 days prior to commencing construction |
| | 5.3.10 | Application of Pesticides | Notice 14 days prior to application |
| | 5.3.11 | Invasive Species Prevention Plan | 30 days prior to commencing construction |
| | 5.3.16 | Site Restoration Report | 60 days after completion of all restoration activities |
| | 5.5.2 | List of Other Required Permits | Upon request |
| | 7 | Delay in Construction | Four years after permit issuance, as necessary |
| | 8 | Complaint Procedures | Prior to commencing construction |
| | 9.1 | Plan and Profile | 30 days prior to commencing construction |

[1] This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. It is not a substitute for the permit. The language of the permit controls.

| Filing Number | Permit Section | Description of Compliance Filing | Due Date |
|---|---|---|---|
| | 9.2 | Status Reports | Monthly through restoration |
| | 9.3 | Notice of Operation and Completion of Construction | Three days prior to commercial operation |
| | 9.4 | As-Builts | 90 days after construction is complete |
| | 9.5 | GPS Data | 90 days after construction is complete |
| | Complaint Reporting | Monthly Complaint Reports | See Route Permit Attachment 1 |
| | Complaint Reporting | Immediate Complaint Reports | By the following day throughout the life of the permit |

**ATTACHMENT 3**
Route Maps


Clarke St
Derby Ave
Duncan Ave
T109N, R39W, Sec. 25
T109N, R38W, Sec. 30
T109N, R38W, Sec. 29
T109N, R38W, Sec. 28
5
78
10
110th St
Redwood County
Murray County
Cottonwood County
T109N, R39W, Sec. 36
T109N, R38W, Sec. 31
T109N, R38W, Sec. 32
T109N, R38W, Sec. 33
Eagle Ave
241st St
Redwood County
Murray County
7
45
77
Redwood County
Cottonwood County
556
5403
T108N, R39W, Sec. 2
T108N, R39W, Sec. 1
T108N, R38W, Sec. 6
T108N, R38W, Sec. 5
T108N, R38W, Sec. 4
T108N, R38W, Sec. 3
22
231st St St
210th St
55
45
T108N, R39W, Sec. 12
T108N, R38W, Sec. 7
T108N, R38W, Sec. 8
T108N, R38W, Sec. 9
T108N, R38W, Sec. 10
300th Ave
Collector Substation 1
221st St
220th St
Murray County
Cottonwood County
T108N, R39W, Sec. 13
T108N, R38W, Sec. 18
T108N, R38W, Sec. 17
T108N, R38W, Sec. 16
T108N, R38W, Sec. 15
211th St
230th St
11
330th Ave
340th Ave
T108N, R39W, Sec. 24
T108N, R38W, Sec. 19
T108N, R38W, Sec. 20
T108N, R38W, Sec. 21
T108N, R38W, Sec. 22
Pell Creek
Collector Substation 2
17
7
11
240th St
290th Ave
T108N, R39W, Sec. 25
T108N, R38W, Sec. 30
T108N, R38W, Sec. 29
T108N, R38W, Sec. 28
T108N, R38W, Sec. 27
191st St
250th Ave
T108N, R39W, Sec. 36
T108N, R38W, Sec. 31
T108N, R38W, Sec. 32
T108N, R38W, Sec. 33
10
T108N, R38W, Sec. 34
0
0.25
0.5
Miles
N
Imagery: MNGeo 2017 Color FSA
Sources: Geronimo Energy, MN Geospatial Commons, MNDOT
Figure 1
Route Map
Plum Creek Wind Project
Docket No. IP-6997/TL-18-701
Residence within 500ft of Segments
Transmission Structure
345 kV Transmission Line Route
Collector Substation 1
Collector Substation 2
Wind Project Area Boundary
Proposed Route Width
NWI Wetlands
MDNR Stream/River
Document Path: Z:\Clients\E_H\Geronimo\Plum_Creek\Permitting\PUC\Site_Permit\Mapping\Requests\20210817\Plum_Creek_PUC_Detailed_Route_Maps.mxd
brian.schreurs
Date: 8/18/2021




0 0.25 0.5
Miles

N

*Imagery: MNGeo 2017 Color FSA*
*Sources: Geronimo Energy, MN Geospatial Commons, MNDOT*

# Figure 2

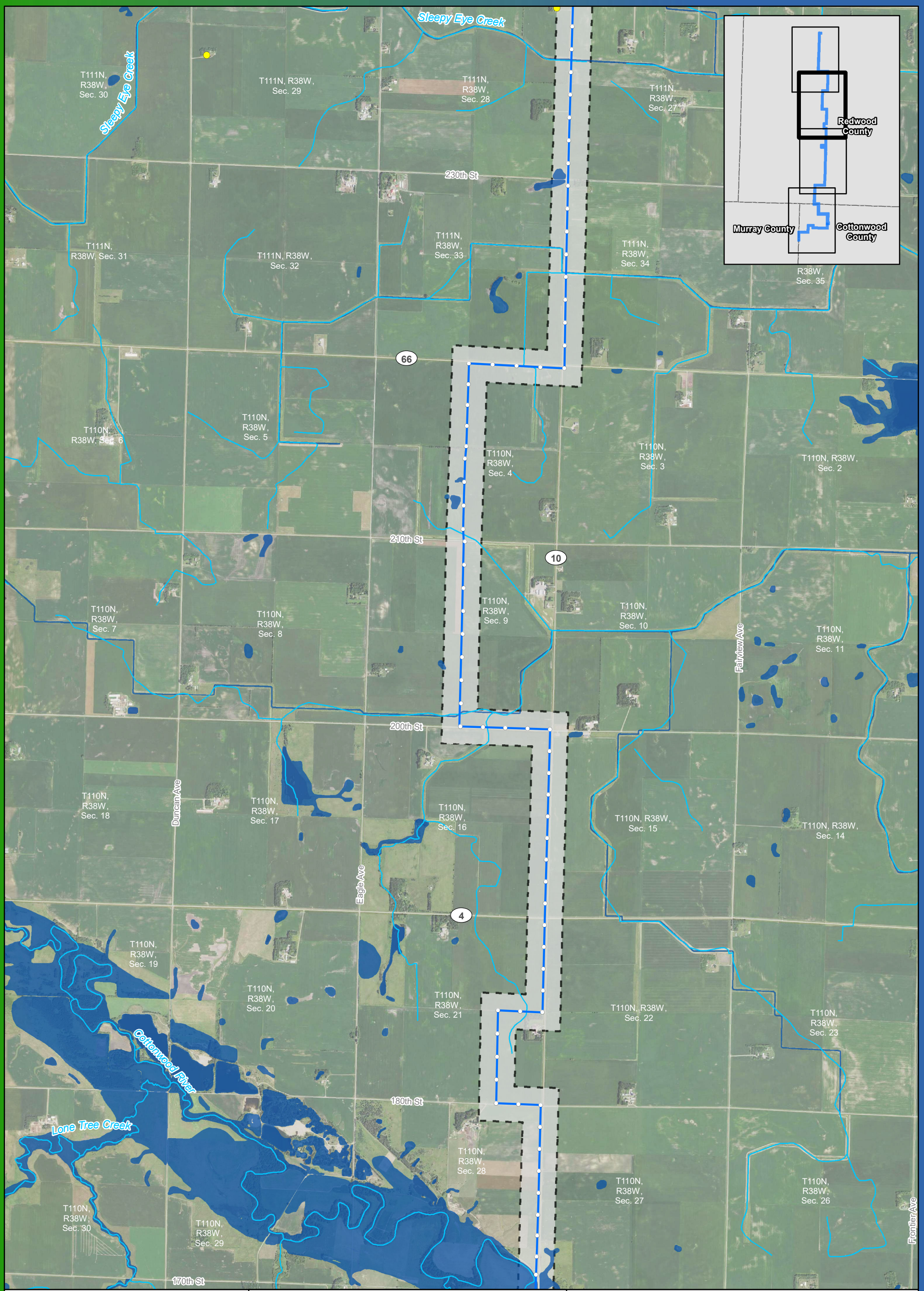
## Route Map
## Plum Creek Wind Project

## Docket No. IP-6997/TL-18-701

- Residence within 500ft of Segments
- Transmission Structure
- 345 kV Transmission Line Route
- Wind Project Area Boundary
- Proposed Route Width
- NWI Wetlands
- MDNR Stream/River

Document Path: Z:\Clients\E_H\Geronimo\Plum_Creek\Permitting\PUC\Site_Permit\Mapping\Requests\20210817\Plum_Creek_PUC_Detailed_Route_Maps.mxd

brian.schreurs Date: 8/18/2021




0 0.25 0.5

Miles

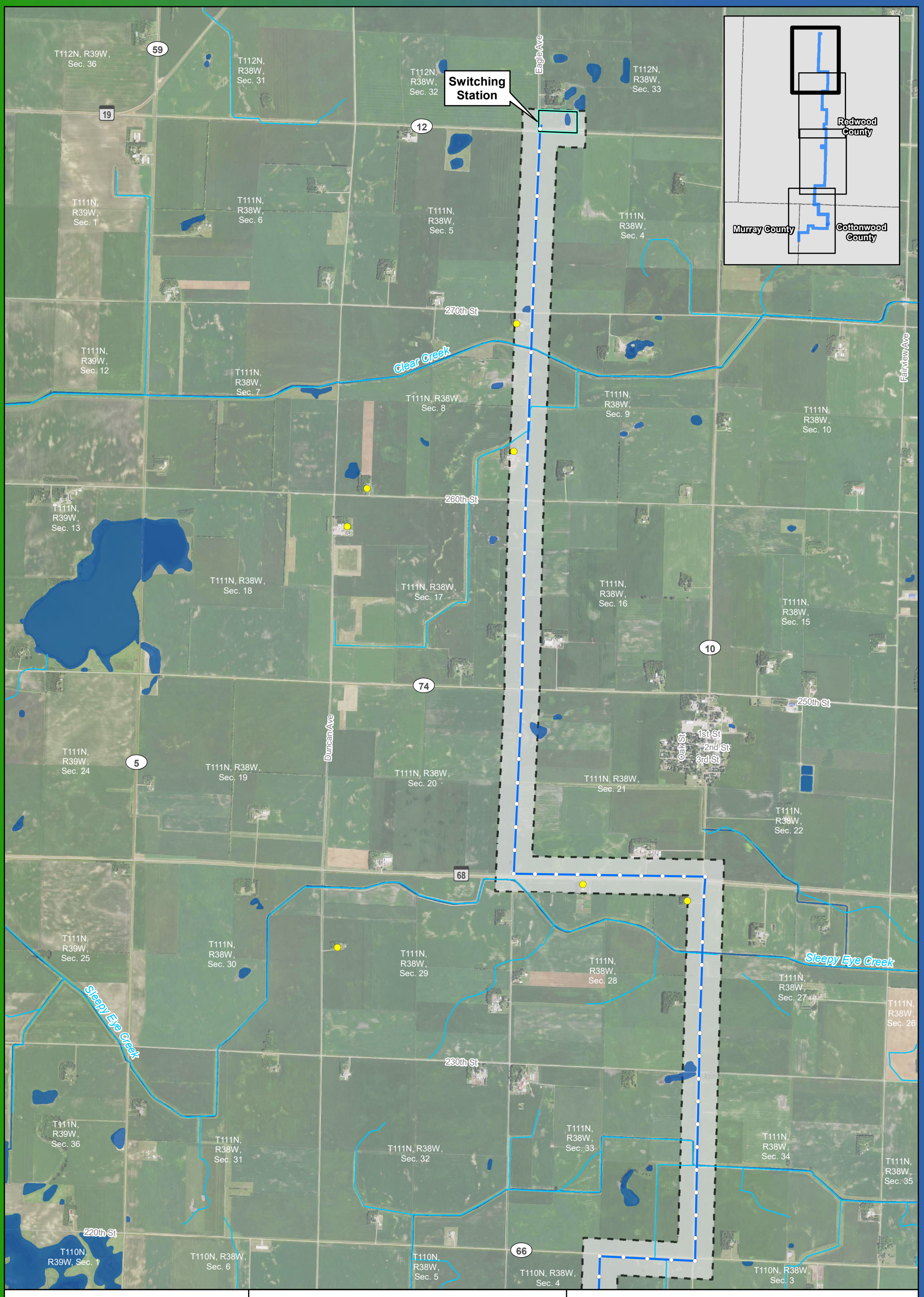
*Imagery: MNGeo 2017 Color FSA*
*Sources: Geronimo Energy, MN Geospatial Commons, MNDOT*

# Figure 3

## Route Map
## Plum Creek Wind Project

## Docket No. IP-6997/TL-18-701

- Residence within 500ft of Segments
- Transmission Structure
- 345 kV Transmission Line Route
- Proposed Route Width
- NWI Wetlands
- MDNR Stream/River




0 0.25 0.5

Miles

*Imagery: MNGeo 2017 Color FSA*
*Sources: Geronimo Energy, MN Geospatial Commons, MNDOT*

# Figure 4

## Route Map
## Plum Creek Wind Project

## Docket No. IP-6997/TL-18-701

- Residence within 500ft of Segments
- Transmission Structure
- 345 kV Transmission Line Route
- Switching Station
- Proposed Route Width
- NWI Wetlands
- MDNR Stream/River

OAH 71-2500-36664
OAH 71-2500-36665
OAH 71-2500-36666
MPUC No. IP6997/CN-18-699
MPUC No. IP6997/WS-18-700
MPUC No. IP6997/TL-18-701

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV T-Line in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV T-Line in Cottonwood, Murray, and Redwood Counties

**TABLE OF CONTENTS**

OAH 71-2500-36664
OAH 71-2500-36665
OAH 71-2500-36666
MPUC No. IP6997/CN-18-699
MPUC No. IP6997/WS-18-700
MPUC No. IP6997/TL-18-701

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV T-Line in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV T-Line in Cottonwood, Murray, and Redwood Counties

**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION**

This matter is pending before Administrative Law Judge Jessica A. Palmer-Denig and involves the Certificate of Need (MPUC Docket No. 18-699), Site Permit (MPUC Docket No. 18-700), and Route Permit (MPUC Docket No. 18-701) Applications of Plum Creek Wind, LLC (Plum Creek or Applicant) for an up to 414 megawatt (MW) large wind energy conversion system (LWECS) and 345 kilovolt (kV) transmission line (T-Line) in Cottonwood, Murray, and Redwood Counties, Minnesota (the Project). The Minnesota Public Utilities Commission (Commission or MPUC) referred this matter to the Office of Administrative Hearings for assignment of an administrative law judge to conduct public and contested case hearings. The Administrative Law Judge was charged with preparing a report containing findings of fact, conclusions of law, and a recommendation on the merits of the proposed Project, applying the certificate of need, siting, and routing criteria established in statute and rule, and providing comments and recommendations, if any, on the conditions and provisions of a certificate of need, site permit, and route permit.

The Administrative Law Judge held a joint public hearing by video conference and telephone on the Certificate of Need, Site Permit, and Route Permit Applications for the Project on February 16, 2021. The Administrative Law Judge held a contested case hearing in this matter by video conference on February 17, 2021. The record remained open for the receipt of written public comments until March 10, 2021. The parties filed final post-hearing submissions on April 6, 2021.

Christina K. Brusven and Lisa M. Agrimonti, Fredrikson & Byron, P.A., appeared on behalf of Plum Creek along with Jenny Monson-Miller of National Grid Renewables, LLC (National Grid Renewables).

Richard Dornfeld, Assistant Attorney General, appeared on behalf of the Minnesota Department of Commerce Energy Environmental Review and Analysis (DOC EERA), along with Bill Storm, Environmental Review Manager and Louise Miltich, Unit Supervisor.

Cha Xiong and Katherine Hinderlie, Assistant Attorneys General, appeared on behalf of the Minnesota Department of Commerce, Division of Energy Resources (DOC DER).

Scott Ek, Energy Facilities Planner, appeared on behalf of Commission staff.

## STATEMENT OF THE ISSUES

1. Has Applicant satisfied the criteria established in Minn. Stat. ch. 216B (2020) and Minn. R. ch. 7849 (2019) for a certificate of need for its proposed 414 MW wind energy conversion system and 345 kV transmission line in Cottonwood, Murray, and Redwood Counties, Minnesota?

2. Has Applicant satisfied the criteria established in Minn. Stat. ch. 216F and section 216E.03, subd. 7 (2020) and Minn. R. ch. 7854 (2019) for a site permit for its proposed 414 MW wind energy conversion system in Cottonwood, Murray, and Redwood Counties, Minesota?

3. Has Applicant satisfied the criteria established in Minn. Stat. ch. 216E (2020) and Minn. R. ch. 7850 (2019) for a route permit for its proposed 345 kV T-Line in Cottonwood, Murray, and Redwood Counties, Minnesota?

## SUMMARY OF CONCLUSIONS AND RECOMMENDATION

Applicant has satisfied the applicable legal requirements and, accordingly, the Administrative Law Judge recommends that the Commission grant a certificate of need, site permit, and route permit for the Project, subject to the conditions and recommendations discussed herein.

Based on the evidence in the hearing record, the Administrative Law Judge makes the following:

## FINDINGS OF FACT

### I. Applicant

1. Applicant, which is headquartered in Bloomington, Minnesota, is an affiliate of National Grid Renewables f/k/a Geronimo Energy, LLC, a National Grid Company.[1]

2. National Grid Renewables has developed several operating wind farms and solar projects throughout the United States and currently has more than 2,500 MW of renewable energy projects under construction or operational.[2]

3. In Minnesota, National Grid Renewables has developed more than 850 MW of renewable energy, including seven wind farms and 200 MW of solar energy.[3] National Grid Renewables developed the Prairie Rose, Odell, Blazing Star, and Blazing Star 2 Wind Farms, which are in the same region as the Project. Prairie Rose is a 200 MW wind farm constructed in Rock and Pipestone Counties; Odell is a 200 MW wind farm constructed in Cottonwood, Jackson, Martin, and Watonwan Counties; Blazing Star and Blazing Star 2 are two separate wind farms in Lincoln County, each 200 MW in size.[4]

4. Plum Creek will develop, design, permit, and operate the Project.[5]

5. The power the Project will generate is being marketed to wholesale customers, including Minnesota utilities and cooperatives, and commercial and industrial (C&I) customers that have identified a need for additional renewable energy or have set clean energy goals.[6]

### II. Applications and Related Procedural Background

6. On November 9, 2018, Plum Creek submitted the Certificate of Need Notice Plan, detailing Plum Creek's plan to provide notice to landowners or others with property within or adjacent to the proposed T-Line corridor associated with the Project.[7]

7. On November 13, 2018, Plum Creek filed a request for exemption from certain certificate of need application data requirements.[8] Following a comment period, on January 17, 2019, the Commission issued an Order approving the Notice Plan and

[1] Ex. 100 at 2 (Certificate of Need Application (CN Application)); Ex. 101 at 1 (Route Permit Application (RP Application)); Ex. 114 at 1 (Supp. and Amended Site Permit Application (SP Application)).
[2] Ex. 100 at 2 (CN Application).
[3] Ex. 114 at 1 (SP Application); Ex. 100 at 2 (CN Application).
[4] Ex. 114 at 1 (SP Application); Ex. 100 at 2 (CN Application).
[5] Ex. 114 at 1 (SP Application); Ex. 100 at 2 (CN Application); Ex. 101 at 1 (RP Application).
[6] Ex. 100 at 2 (CN Application).
[7] Certificate of Need Notice Plan Approval Request (Nov. 9, 2018) (eDocket No. 201811-147723-02).
[8] Request for Exemption from Certain Application Content Requirements (Nov. 9, 2018) (eDocket No. 201811-147724-02).

Exemption Requests for the Project.[9] On June 27, 2019, Plum Creek filed a letter attesting to its compliance with the requirements of the Notice Plan.[10]

8. On November 12, 2019, Plum Creek filed its Application with the Commission for the Certificate of Need for the Project (CN Application) and Route Permit Application (RP Application).[11] On November 12 and 14, 2019, Plum Creek filed its Site Permit Application.[12]

9. After a comment period, on January 30, 2020, the Commission issued an Order Accepting Applications Establishing Procedural Framework, Varying Rules, and Notice of and Order for Hearing accepting the certificate of need, site, and route permits as substantially complete; approving joint public meetings and hearings and combined environmental review on all three Applications to the extent practical; requesting DOC EERA to prepare an environmental impact statement (EIS) in lieu of an environmental report; referring all three Applications to the Office of Administrative Hearings for a joint contested case hearing; and granting certain timing variances.[13]

10. Plum Creek completed the required newspaper and mail notices of the Applications to landowners and local units of government.[14]

11. On March 9, 2020, the Commission issued a Notice of Public Information and Environmental Impact Statement Scoping Meeting, scheduling a public meeting for March 25, 2020, in Walnut Grove, Minnesota and announcing that written comments would be accepted through April 8, 2020.[15]

12. On March 16, 2020, the Administrative Law Judge issued a Notice of Prehearing Conference scheduling a prehearing conference to be held on Thursday, April 9, 2020.[16] The prehearing conference was held by telephone on that date,[17] but was continued to offer the parties additional time to devise a schedule due to the COVID-19 pandemic and the issuance of Emergency Executive Order 20-33.[18]

13. On May 27, 2020, the Notice of Public Information and Environmental Impact Statement Scoping Meeting set a remote-access hearing for June 16, 2020.[19]

---

[9] Order (Jan. 17, 2019) (eDocket No. 20191-149302-01).
[10] Plum Creek Compliance Filing (Notice Plan) (June 27, 2019) (eDocket No. 20196-153889-01).
[11] Ex. 100 (CN Application); Ex. 101 (RP Application).
[12] Site Permit Application (Nov. 14, 2019) (eDocket No. 210911-157556-02).
[13] Ex. 105 (Order Accepting Applications as Complete).
[14] Ex. 103 (Plum Creek Compliance Filings, RP (Dec. 16, 2019)); Ex. 106 (Plum Creek Compliance Filing, SP (Feb. 24, 2020)).
[15] Ex. 107 (Notice of Public Information and Environmental Impact Statement Scoping Meeting). The Commission subsequently issued a notice dated March 16, 2020, suspending all public meetings during the following two-week period due to the COVID-19 pandemic. *See* eDocket No. 20203-161341-03.
[16] Notice of Prehearing Conference (Mar. 16, 2020) (eDocket No. 20203-161286-03).
[17] *See* Amended Notice of Prehearing Conference (Apr. 3, 2020) (eDocket No. 20204-161822-02).
[18] Notice of Continued Prehearing Conference (Apr. 10, 2020) (eDocket No. 20204-162020-01).
[19] Ex. 108 (Notice of Rescheduled Public Information and Environmental Impact Statement Scoping Meeting).

DOC EERA issued the Draft Scoping Document on May 28, 2020, which the DOC EERA filed with the Commission on June 2, 2020.[20]

14. The Public Information and Environmental Impact Statement Meeting was held on June 16, 2020.[21] The 20-day comment period closed on July 7, 2020.[22]

15. Also on July 7, 2020, the Administrative Law Judge held a status conference with the parties.[23] The Administrative Law Judge subsequently issued a First Prehearing Order setting a schedule for proceedings.[24]

16. On August 13, 2020, the Commission met to consider the draft site permit and determine the T-Line routes to be analyzed in the environmental impact statement.[25]

17. On August 28, 2020, Applicant filed its Supplemental and Amended Site Permit Application for a Large Wind Energy Conversion System (SP Application).[26]

18. On August 28, 2020, the Applicant filed the following direct testimony in support of its SP Application: John Strom,[27] Randy Porter,[28] Chris Nuckols,[29] Michael Morris,[30] Duke Kuvaas,[31] Elizabeth Engelking,[32] Eddie Duncan,[33] Rob Copouls,[34] Jordan Burmeister,[35] and Brie Anderson.[36]

19. On September 28, 2020, DOC DER filed the direct testimony of Michael N. Zajicek.[37]

20. On October 28, 2020, Applicant filed the rebuttal testimony of Ms. Engelking.[38]

21. The Commission filed its Order Issuing the Draft Site Permit on October 30, 2020, approving a draft site permit for the Project.[39] Based on Applicant's representation

[20] Ex. 201 (DEIS Scoping Document).
[21] Scoping and Informational Meeting Transcript (Jun. 16, 2020) (eDocket No. 20207-164841-03).
[22] Ex. 108 (Notice of Rescheduled Public Information and Environmental Impact Statement Scoping Meeting).
[23] *See* Notice of Status Conference (June 25, 2020) (eDocket No. 20206-164269-02).
[24] First Prehearing Order (July 23, 2020) (eDocket No. 20207-165227-02).
[25] Ex. 128 (Order Issuing Draft Site Permit).
[26] Ex. 114 (SP Application).
[27] Ex. 115 (Strom Direct).
[28] Ex. 116 (Porter Direct).
[29] Ex. 117 (Nuckols Direct).
[30] Ex. 118 (Morris Direct).
[31] Ex. 119 (Kuvaas Direct).
[32] Ex. 120 (Engelking Direct).
[33] Ex. 121 (Duncan Direct).
[34] Ex. 122 (Copouls Direct).
[35] Ex. 123 (Burmeister Direct).
[36] Ex. 124 (Anderson Direct).
[37] Ex. 300 (Zajicek Direct).
[38] Ex. 127 (Engelking Rebuttal).
[39] Ex. 128 (Order Issuing Draft Site Permit).

that it intended to incorporate the use of newer turbine models not previously identified, the Commission required Applicant to update its original permit application with additional data on the potential use and impact of these turbine models.[40] The Commission also ordered that an additional route segment, the Blue E segment as described in Appendix F of the RP Application, be included in the scope of the EIS.[41] The Commission recognized that Applicant had not reached an agreement with the affected landowner on use of the land, but nonetheless determined that consideration of the alternative would "ensure a thorough examination of potential project impacts and possible alternatives."[42]

22. On November 4, 2020, DOC EERA issued the Environmental Impact Statement Scoping Decision.[43]

23. On November 12, 2020, DOC DER filed the surrebuttal testimony of Mr. Zajicek.[44]

24. On November 17, 2020, the Administrative Law Judge held another prehearing conference with the parties,[45] and subsequently issued a Second Prehearing Order revising deadlines within the schedule of proceedings.[46]

25. On January 11, 2021, DOC EERA filed Notice of the Draft Environmental Impact Statement (DEIS) and DEIS. The Notice provided information on where the DEIS could be viewed. It provided notice of a remote access public meeting to be held on February 1, 2021, at 6:00 p.m., and a comment period to run through February 12, 2021, with a deadline of 4:30 p.m.[47] The Notice was published in the EQB Monitor on January 12, 2021.[48]

26. A public meeting on the Draft Site Permit and DEIS was held remotely on February 1, 2021.[49] Commission staff, DOC EERA, and Applicant made presentations at that meeting. Attendees were provided "a summary of the state's site and route permit application review process, followed by Plum Creek's description of the proposed project, and ending with a brief discussion on the draft site permit and draft environmental impact statement that has been prepared for this proposed project."[50]

27. On February 2, 2021, the Notice of Public and Evidentiary Hearings was filed. The Notice announced that public hearings would take place on February 16, 2021, at 1:00 p.m. and 6:00 p.m., by remote access. In addition, it provided notice that the Administrative Law Judge would hold an evidentiary hearing on February 17, 2021, also

---

[40] *Id.* at 2.
[41] *Id.*
[42] *Id.* at 2-3.
[43] Ex. 205 (EIS Scoping Decision).
[44] Ex. 301 (Zajicek Surrebuttal).
[45] Notice of Prehearing Conference (Nov. 10, 2020) (eDocket No. 202011-168208-02).
[46] Second Prehearing Order (Nov. 20, 2020) (eDocket No. 202011-168495-01).
[47] Ex. 206 (DEIS Availability Notice); Ex. 207 (DEIS).
[48] EQB Monitor (Jan. 12, 2021) (eDocket No. 20211-169761-02).
[49] Public Meeting Transcript (Tr.) (Feb. 1, 2021).
[50] *Id.* at 4.

by remote access. Finally, the notice encouraged the public to submit comments on several questions: (1) Should the Commission issue a certificate of need for the proposed large wind energy conversion system and high-voltage transmission line? (2) Should the Commission grant a site permit for the proposed large wind energy conversion system? (3) Should the Commission grant a route permit for the proposed high-voltage transmission line? (4) If granted, what additional conditions or requirements should be included in a site or route permit? What route alternative should be selected and why?[51]

28. The public hearings were held on February 16, 2021, and the evidentiary hearing on February 17, 2021. The hearings were held remotely, by video conference and telephone, due to the public health risks associated with the COVID-19 virus.

29. At the public hearings, Commission staff, DOC EERA, and Applicant provided an overview of the Project, including the regulatory procedure to date, and the remaining process. Members of the public were provided an opportunity to comment.

30. At the evidentiary hearing, the Administrative Law Judge received the parties' exhibits into the record.[52] The parties waived cross examination of the majority of the witnesses, but the parties examined Applicant's witness, Mr. Morris, and DOC DER witness, Mr. Zajicek.[53]

31. The Commission accepted written comments on the Applications through 4:30 p.m. on March 10, 2021.[54]

32. The parties filed post-hearing submissions, with the last submissions received on April 6, 2021.

33. Subsequently, the DOC EERA filed the Final EIS on April 12, 2021.[55] DOC EERA issued the Notice of Availability of Final Environmental Impact Statement on April 12, 2021, and it filed the notice with the Commission on April 13, 2021.[56]

[51] Ex. 133 (Notice of Public and Evidentiary Hearings).
[52] *See* Final Master Exhibit List (Feb. 26, 2021) (eDocket No. 20212-171353-02).
[53] *See* Evid. Hr'g Tr. (Feb. 17, 2021).
[54] Ex. 133 (Notice of Public and Evidentiary Hearings).
[55] Final Environmental Impact Statement (Final EIS) (Apr. 12, 2021) (eDocket No. 20214-172800-01). Note that the parties' final submission referenced the DEIS because the Final EIS had not yet been filed. All citations have been updated to reference the Final EIS.
[56] Notice of Availability of Final Environmental Impact Statement (Apr. 13, 2021) (eDocket No. 20214-172852-01).

## III. General Description of the Project

34. The proposed Project is comprised of: (a) a LWECS, as defined in the Wind Siting Act, Minn. Stat. ch. 216F, with a Project boundary of approximately 73,000 acres in Cottonwood, Murray, and Redwood Counties, Minnesota (the Wind Farm); and (b) the proposed T-Line, which is a 345 kV high-voltage transmission line, as defined by Minn. Stat. § 216E.01, subd. 4, approximately 31-miles in length in Cottonwood and Redwood Counties, Minnesota.[57]

35. For the Wind Farm, Plum Creek proposes to construct an up to 414 MW nameplate capacity wind farm and associated facilities in Cottonwood, Murray, and Redwood Counties, Minnesota, consisting of up to 74 wind turbines.[58]

36. The Wind Farm layout proposed by Plum Creek would be constructed with one of two turbine model types: the Siemens Gamesa SG170 6.2 MW turbine and the Vestas 162 5.6 MW turbine.[59]

37. The two turbines under consideration consist of a nacelle, blades, hub, tower, and foundation. The nacelle houses the generator, gear boxes, controller, generator cabling, hoist, generator cooling, and other associated equipment. An anemometer and weathervane located on the top of the turbine nacelle continuously monitor wind speed and direction. The hub supports the blades and connecting rotor, yaw motors, mechanical braking system, and a power supply for emergency braking. The hub also contains an emergency power supply to allow the mechanical brakes to work if electric power from the grid is lost. Each turbine has three blades composed of carbon fiber, fiberglass, and internal supports to provide a lightweight but strong component. The tip of each blade is equipped with a lightning receptor to safely conduct lighting strikes to ground.[60] The two turbine models under consideration have active yaw and pitch regulation and asynchronous generations and are capable of operating with adjusted cut-in speed and full blade feathering.[61]

38. The foundation and tower support the hub, blades, and nacelle. Tower foundations are anticipated to be a spread-foundation design. The tubular towers will be painted a non-glare white or off-white. The tower houses electrical, control, and communication cables and a control system located at the base of the tower.[62]

39. Both proposed turbine models have Supervisory Control and Data Acquisition (SCADA) communication technology to control and monitor the Project.[63] The

[57] Ex. 100 at 2 (CN Application).
[58] Ex. 123 at 5-6 (Burmeister Direct).
[59] *Id.* at 6.
[60] Ex. 114 at 17 (SP Application).
[61] Ex. 123 at 6 (Burmeister Direct).
[62] Ex. 114 at 17 (SP Application).
[63] Ex. 123 at 7 (Burmeister Direct).

SCADA communications systems permit automatic, independent operation and remote supervision, allowing the simultaneous control of the wind turbines.[64]

40. In addition to the wind turbines and associated equipment, the Wind Farm will include the following permanent and temporary associated facilities:

(a) Gravel access road and improvements to existing roads;

(b) Underground and aboveground electric collection and communication lines;

(c) Operation and maintenance (O&M) facility;

(d) Two collector substations;

(e) Up to four permanent meteorological towers;

(f) Sonic Detection and Ranging (SoDAR) or Light Detection and Ranging (LiDAR) unit;

(g) Up to three laydown areas;

(h) Aboveground electrical feeder lines;

(i) Up to two Aircraft Detection Lighting Systems (ADLS) radars; and

(j) Up to two temporary batch plant areas for construction of the project.[65]

41. The Project will include a wind access buffer of five rotor diameters (RD) in the prevailing wind directions and three RDs in the non-prevailing wind directions; a noise setback meeting the MPCA's Noise Standards found in Minn. R. ch. 7030 (2019) (the Noise Standards); and a minimum setback of 1,000 feet from residences and 1.1 times total turbine height from public roads and trails.[66]

42. The Project includes two collector substations that will require approximately 10 acres of land each within the Project Area. Applicant plans to locate the O&M facility adjacent to the Plum Creek Wind Farm Collector Substation 2 (Collector Substation 2). Plum Creek sited these facilities to avoid and minimize, to the extent practicable, disturbance from installation of the collection system and fiber-optic communication system.[67]

43. For the T-Line, Plum Creek seeks to construct approximately 31 miles of a new single circuit 345 kV transmission line needed to interconnect the proposed Wind

[64] Ex. 114 at 19 (SP Application).
[65] Ex. 123 at 6 (Burmeister Direct).
[66] Ex. 114 at 12-13 (SP Application).
[67] *Id.* at 21.

Farm to the existing Brookings-to-Hampton 345 kV T-Line in Redwood County, Minnesota.[68]

44. The T-Line will originate at the proposed Collector Substation 2, to be located in Ann Township in northwestern Cottonwood County, then travel north and east for approximately five miles to connect to a second Wind Farm collector substation (Collector Substation 1) also in Ann Township. The T-Line will then connect Collector Substation 1 to the proposed Switching Station approximately 26 miles to the north. The Switching Station will be constructed by the interconnecting transmission owner to connect the proposed T-Line to the existing Brookings-to-Hampton 345 kV T-Line.[69]

45. Plum Creek determined that 345 kV voltage was the appropriate voltage based on the size and location of the Wind Farm. It is the primary voltage for high voltage lines in Minnesota, including for the CapX2020 project. Plum Creek also conducted an analysis showing that the Wind Farm will generate approximately 730 amps on a 345 kV line, within its allowable ampacity.[70] By contrast, the only other size of transmission line in use in the area—a 115 kV voltage line—is not a reasonable alternative because it is not designed to carry the amount of energy that will be generated by the Wind Farm, would be more costly than a 345 kV interconnection on a capital cost basis, and also would be less efficient, resulting in higher energy losses. The DOC DER witness, Mr. Zajicek, agreed that 345 kV is the appropriate voltage for the T-Line.[71]

46. The conductor for the 345 kV T-Line will consist of either 2-bundled "Cardinal" (954 kcmil) or 2-bundled "Bittern" (1,272 kcmil) Aluminum Conductor Steel Reinforced cables or cables with comparable capacity. The 345 kV conductors will have a capacity equal or greater to 1,992 amperes.[72]

47. Plum Creek proposes to use direct embedded poles for tangent structures. Angled or dead-end structures will be installed with concrete foundations between 18 and 45 feet deep, depending on soil conditions, geotechnical analysis, and the structures' function.[73]

48. The proposed 345 kV T-Line has been designed to meet or surpass all relevant local and state codes and the National Electric Safety Code (NESC). Applicant will meet appropriate standards for construction and installation, and it will follow applicable safety procedures during and after installation.[74]

49. The estimated cost of the Project is $680 million to $785 million for the SG170 turbine, and $730 million to $840 million for the V162 turbine, including the T-Line, easement payments, wind turbines, associated electrical and communication equipment

[68] Ex. 101 at 1 (RP Application).
[69] *Id.* at 4.
[70] Ex. 116 at 3 (Porter Direct).
[71] Ex. 300 at 17-19 (Zajicek Direct).
[72] Ex. 101 at 10 (RP Application).
[73] *Id.* at 8.
[74] *Id.* at 10.

and systems, and access roads.[75] Ongoing operations and maintenance costs, and administrative costs are estimated to be approximately $20 to $25 million per year, including payments to landowners for wind lease and easement rights.[76]

## IV. Wind Farm Site and T-Line Route Considerations

### A. Site Location and Characteristics

50. The Wind Farm will be located in Germantown, Highwater, Ann, and Westbrook Townships in Cottonwood County, Minnesota; Holly, Dovray, Murray, Des Moines River Townships in Murray County, Minnesota; and North Hero and Lamberton Townships in Redwood County, Minnesota.[77]

51. The Wind Farm will contain approximately 72,968 acres, of which approximately 52,708 is currently leased.[78]

52. The Wind Farm will consist of approximately 91.2 percent cropland, 3.5 percent developed, 2.7 percent pasture/grassland, 1.8 percent aquatic/wetland/open water, 0.7 percent mixed forest, and 0.1 percent introduced and semi-natural vegetation.[79]

53. The Wind Farm will be located in a rural area. The population densities within five miles of the Project Area boundary are between 3.6 and 9.6 people per square mile.[80]

### B. Wind Resource Considerations

54. Plum Creek has conducted detailed site wind characterization studies and analysis over the past three years and had three temporary meteorological towers monitoring weather data in the Project Area. In addition, Plum Creek relied on the National Renewable Energy Laboratory's Wind Integration National Dataset. The mean annual wind speed at 80 meters above ground-level is estimated to be 8.2 to 8.5 m/s.[81] The months of October through April generally are expected to have the highest wind speeds, while the lowest wind speeds are expected to occur during the months of June through October. On average, wind speeds are higher in the evening and nighttime hours, and lower in the daytime.[82]

[75] Ex. 120 at 7 (Engelking Direct).
[76] Ex. 114 at 136 (SP Application).
[77] *Id.* at 1; *see also id.* at Figure 1 (depicting the area of the Project (Project Area).
[78] Ex. 123 at 10 (Burmeister Direct).
[79] *See* Ex. 114 at 94 (SP Application).
[80] Final EIS at 75-76 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[81] Ex. 114 at 124 (SP Application).
[82] *Id.* at 124-25.

55. The prevailing wind directions in the Project Area are generally from the south and the north-northwest.[83]

56. Plum Creek estimates the Project will have a net capacity factor of between 40 to 48 percent and an average annual output of between approximately 1,450,000 and 1,740,000 megawatt hours (MWh).[84] Annual energy production output will depend on final design, site specific features, and annual variability in the wind resource.

### C. Transmission Line Considerations

#### 1. Route Evaluation

57. Plum Creek's proposed T-Line will be located in Cottonwood and Redwood Counties, Minnesota.[85]

58. Plum Creek utilized a year-long systematic process to identify, refine, and compare route segment options, which included identifying locations for potential termini, establishing boundaries for the T-Line project study area, identification of opportunities and constraints, public open houses, and consultation with landowners and agencies.[86]

59. Plum Creek selected the location for Collector Substations 1 and 2 based on landowner willingness to host the facilities, access within the Wind Farm, facility constructability, environmental suitability, to minimize losses, and to optimize the electrical layout associated with the Wind Farm.[87]

60. The Switching Station location was selected based on its proximity to the existing Brookings-to-Hampton 345-kV T-Line, environmental suitability, landowner willingness to host the facility, and constructability. The location also provides a direct route to connect the Wind Farm to the existing transmission system because the proposed Switching Station is directly north of the Wind Farm. Applicant sited the Switching Station to avoid Wildlife Management Areas (WMAs) along the Brookings-to-Hampton 345-kV T-Line located approximately three to five miles east of its proposed location. In the area to the west of the proposed Switching Station location, the Brookings-to-Hampton line runs further north and would require a longer line and more impacts due to the additional distance.[88]

61. Plum Creek identified four segments comprising two distinct routes based on routing criteria and voluntary landowner participation. The Green and Yellow Segments are alternative routes to connect Collector Substation 1 with Collector Substation 2. The Blue and Red Segments are two alternative routes to connect Collector Substation 1 to the Switching Station to the North. All the proposed segments traverse

[83] *See id.* at 128.
[84] Ex. 100 at 21 (CN Application).
[85] *Id.* at 2.
[86] Ex. 101 at 14 (RP Application).
[87] *Id.* at 15.
[88] *Id.*

predominantly cultivated crop lands, utilize roads and parcel lines, and account for landowner preferences for the anticipated alignments.[89]

62. ***Green Segment.*** The Green Segment is approximately 5.5 miles and connects the Wind Farm's Collector Substation 1 to Collector Substation 2. It begins at Collector Substation 2 in Ann Township, Cottonwood County. From Collector Substation 2 the segment travels north along 300th Avenue for one mile before turning east along 230th Street for one mile. The Green Segment then turns north along County State Aid Highway (CSAH) 7 for about 0.75 mile before turning east for 0.5 mile, then south again for 0.25 mile along the field edge. The route then turns east again and follows parcel boundaries for 1.5 miles. At this point, the segment crosses 340th Avenue, turns north, and parallels the east side of the road for 0.5 mile before reaching Collector Substation 1 in Ann Township, Cottonwood County.[90]

63. ***Yellow Segment.*** The Yellow Segment is approximately 5.0 miles and also connects Wind Farm Collector Substation 1 and Wind Farm Collector Substation 2. It begins at Collector Substation 2 in Ann Township, Cottonwood County. From Collector Substation 2, the Yellow Segment travels east along CSAH 11 for one mile before CSAH 11 turns to the north. The Yellow Segment continues traveling east, now along 240th Street, for one mile before turning north along 330th Avenue for one mile. At the intersection of 330th Avenue and CSAH 11, the segment turns east for one mile, crosses 340th Avenue, then turns north again and parallels 340th Avenue on the east side of the road for one mile before reaching Collector Substation 1 in Ann Township, Cottonwood County.[91]

64. ***Blue Segment.*** The Blue Segment is approximately 26.1 miles long and connects Wind Farm Collector Substation 1 to the Switching Station. The Blue Segment begins at Collector Substation 1 to Ann Township, Cottonwood County. The segment runs north through North Hero, Johnsonville, and Granite Rock Townships before reaching the Switching Station in southern Vesta Township in Redwood County. From Collector Substation 1, the Blue Segment follows 340th Avenue north for one mile before turning west on 210th Street for one mile. The segment turns north again at 330th Avenue for one mile before turning west for 0.5 mile to Eagle Avenue. The Blue Segment follows Eagle Avenue north for two miles to U.S. Highway 14 and then turns east for one mile to CSAH 10. The Blue Segment turns north on CSAH 10 for four miles to 160th Street where the segment turns west for half mile to a private driveway on the north side of the road. The segment then follows the private driveway for one quarter of a mile before turning back east along the field edge for 0.5 mile to CSAH 10. The Blue Segment follows CSAH 1 north for 1.75 miles to 180th Street. At 180th Street, the Blue Segment turns west for one quarter of a mile, then north along a parcel line for 0.5 mile, before turning back east for one quarter of a mile to CSAH 10. At CSAH 10, the Blue Segment turns north again for 1.5 miles to 200th Street where the segment turns west for half mile before following a parcel line/field edge north for two miles (220th Street). The Blue Segment turns east

[89] Ex. 123 at 11 (Burmeister Direct).
[90] Ex. 101 at 20 (RP Application).
[91] *Id.*

for half mile back to CSAH 10 and continues north for two more miles to Minnesota Highway 68 where the segment turns west for one mile. The Blue Segment then turns north along Eagle Avenue for the final four miles before reaching the Switching Station.[92]

65. In general, the Blue Segment runs in a straight line, primarily along CSAH 10. There are three locations where the route jogs to the west rather than continuing in a straight line. First, Plum Creek proposes not to follow alternate segment B-I, which would run along Eagle Avenue between 200th and 220th Streets, because there are four homes within approximately 500 feet of the road along that portion of Eagle Avenue. Second, Plum Creek proposes jogs just north of 160th Street because it was unable to obtain an easement on the quarter mile segment along CSAH 10. Third, Plum Creek proposes a jog just north of 180th Street to address aesthetic preferences of a landowner.[93]

66. The Commission ordered that Blue Segment E between 160th and 170th Street be evaluated in the proceeding. Plum Creek has attempted to obtain an easement from the landowner of the affected property periodically since 2016. Although Plum Creek remains interested in acquiring easement rights for the affected parcel, it has not gotten a positive response from the landowner to date.[94]

67. ***Red Segment.*** The Red Segment is approximately 26.8 miles long and would connect Wind Farm Collector Substation 1 to the Switching Station. The Red Segment begins at Collector Substation 1 to Ann Township, Cottonwood County. The segment runs north and slightly west through North Hero, on the border of Springdale Township, and through portions of Johnsonville, Gales, and Granite Rock Townships prior to connecting to the Switching Station in southern Vesta Township in Redwood County. From Collector Substation 1, the Red Segment follows 340th Avenue north for one mile before turning west on 210 Street for one mile. The Route turns north again at 330th Avenue for one mile before turning west for 1.5 miles to Duncan Avenue. The Red Segment turns north on Duncan Avenue for three miles before turning west on 130th Street for one mile and north again on CSAH 5 for five miles. At the intersection of CSAH 5 and 180th Street, the Red Segment turns west for a half mile before turning north along the property line for one mile to CSAH 4. The Route turns east for half mile to CSAH 5 and turns north again for one mile to 200th Street. At 200th Street, the Red Segment turns east for a half mile before following a parcel line north for one mile and turning east along 210th Street to Duncan Avenue. The Red Segment follows Duncan Avenue north for five miles to 260th Street before turning east for one mile to Eagle Avenue. The Red Segment then turns north along Eagle Avenue for the final two miles before reaching the Switching Station. In total, approximately ninety-two percent of the Route parallels roads, and the other eight percent follows property lines or field edges.[95]

68. ***Cottonwood River Alternative Alignment.*** The Minnesota Department of Natural Resources (MDNR) requested that Plum Creek evaluate an alternative route segment that would result in fewer crossings of the Cottonwood River than the original

[92] *Id.* at 21.
[93] Ex. 123 at 12 (Burmeister Direct).
[94] *Id.* at 13.
[95] Ex. 101 at 21-22 (RP Application).

Red Route alignment along CSAH 5. In response to the MDNR's request, Plum Creek widened the portion of the Red Route (to 6,250 feet) near the intersection of CSAH 5 and CSAH 4 and the Cottonwood River. Expanding the requested route width allows flexibility in crossing the Cottonwood River and its associated floodplain and wetlands along the Red Route. The Cottonwood River Alternative Alignment is approximately two miles long and parallels property lines and roads.[96]

69. The Green Segment combined with the Blue Segment is slightly shorter and offers the most direct path between the Wind Farm collector substations and the Switching Station. Plum Creek has acquired 100 percent of the easements required for the Green, Yellow, and Blue Segments, and 75 percent of the easements required for the Red Segment.[97]

### 2. T-Line Structure Types and Spans

70. The new 345 kV T-Line will be constructed of custom steel single-pole (monopole) structures. Plum Creek will use four types of monopole structures: tangent, small angle, heavy angle, and dead end. Specialty structures, such as H-frame structures, may be required in certain situations such as longer spans to avoid environmentally sensitive resources, including wetlands complexes.[98]

71. These structures are typically used in the following situations: (a) Tangent – structures that support straight or nearly straight runs of conductor; (b) Small Angle – structures that turn the conductor approximately 2 to 30 degrees; (c) Heavy Angle – structures that turn the conductor approximately 30 to 60 degrees; and (d) Dead End – structures that turn the conductor approximately 60 to 90 degrees or take the full tension of the line in one direction.[99]

72. The T-Line will largely be constructed of monopole structures with a delta configuration, i.e., two arms on one side and one arm on the other.[100] In addition, for the structures that run along Highway 14 , Plum Creek proposes two alternative alignments: (i) a proposed horizontal configuration that shifts the alignment approximately 20 feet away from the edge of the highway right-of-way edge; and (ii) a vertical design with all arms on one side, coupled with more minor pole shifts, in the 10-feet range.[101] Both alternative alignments would avoid the clear zone along Highway 14, as required by the Minnesota Department of Transportation (MnDOT).[102]

73. The proposed transmission structures will range in height from approximately 110 to 125 feet tall. The typical span between the structures will be about 650 feet. Generally, tangent structures will be directly embedded. The angle and dead-

[96] Final EIS at 131, 146, 148 (Apr. 12, 2021) (eDocket No. 20214-172800-01); Ex. 204 at 3-4 (Scoping Decision Cmts. & Recs.).
[97] Ex. 123 at 11 (Burmeister Direct).
[98] Ex. 101 at 8 (RP Application).
[99] *Id.*
[100] Ex. 115 at 3 (Strom Direct).
[101] Ex. 123 at 9 (Burmeister Direct).
[102] *Id.* at 9-10.

end structures will have concrete foundations between 18 and 45 feet deep, depending on soil conditions, geotechnical analysis, and the structures' function.[103]

### 3. T-Line Conductors

74. The conductors for the 345-kV T-Line will consist of either 2-bundled "Cardinal" (954 kcmil) or 2-bundled "Bittern" (1,272 kcmil) Aluminum Conductor Steel Reinforced cables, or cables with comparable capacity. The 345-kV conductors will have a capacity equal or greater to 1,992 amperes (amps).[104]

### 4. T-Line Route Widths

75. Plum Creek proposes the Green, Yellow, and Blue Segments to have a route width of 1,000 feet for their entire length.[105]

76. Plum Creek proposes a route width of two-thirds of a mile for the majority of the Red Segment. Plum Creek identified multiple alignment options within the Red Segment route width, such as those that run along field lines, roads, and property lines that could be used as part of a new T-Line corridor. Plum Creek generally requests a wider route width on the Red Segment to increase flexibility in obtaining land rights for the T-Line Project.[106]

77. Along the Red Segment, Plum Creek requests a wider route width of 6,250 feet (1.2 miles) for 1.7 miles near the intersection of CSAH 5 and CSAH 4 and the Cottonwood River to provide routing flexibility crossing the Cottonwood River and its associated floodplain and wetlands.[107]

78. Where the proposed segments share a corridor, the route width is proposed at 1,000 feet.[108]

### 5. T-Line Right of Way

79. Plum Creek anticipates constructing the new single-circuit 345-kV T-Line and structures using a design and span lengths that require a 150-foot-wide right-of-way. When paralleling existing road rights-of-way, Plum Creek proposes to place poles on adjacent private property, within approximately 10 feet of the existing road right-of-way. These pole placements allow the T-Line right-of-way to share existing road rights-of-way to the greatest extent feasible and will reduce the overall size of the easement required from the private landowner along roads. Pole placement and offset distances may vary in

[103] Ex. 101 at 8 (RP Application).
[104] *Id.* at 10.
[105] *Id.* at 7.
[106] *Id.* at 7-8.
[107] *Id.* at 8.
[108] *Id.*

areas such as highway interchanges due to county or state design requirements and in areas of planned future road expansion.[109]

### 6. T-Line Project T-Line Project Costs

80. Plum Creek developed design-specific route and structure cost estimates for the T-Line. These costs include all T-Line costs (including materials, associated construction, permitting and design costs, and risk assessment contingencies), and right-of-way costs. [110]

81. The Green Segment cost was estimated at $4,642,000 in 2019 dollars.[111]

82. The Yellow Segment cost was estimated at $4,220,000 in 2019 dollars.[112]

83. The Blue Segment cost was estimated at $23,000,000 in 2019 dollars.[113]

84. The Red Segment cost was estimated at $23,300,000 in 2019 dollars.[114]

## V. Wind Rights and Easement/Lease Agreements

85. Plum Creek worked with landowners to secure sufficient land lease and wind easements/setback easement agreements to build the Project. Land rights secured from each landowner vary, and may include, but are not limited to the rights to construct wind turbines and Project facilities, including access roads, rights to wind and buffer easements, authorization to construct transmission feeder lines in public road right-of-way, and rights to additional land, if any, required to mitigate environmental impacts. Plum Creek currently leases approximately 52,708 acres of the 72,968 acres within the Project Area (72 percent of the Project Area).[115] All Project facilities will be sited on leased land and the current leasehold is sufficient to accommodate the proposed facilities, required buffers, and turbine placement flexibility needed to avoid natural resources, homes, and other sensitive features.[116]

86. The Project's layout follows the wind energy conversion facility siting criteria outlined in the Commission's Order Establishing General Wind Permit Standards, Docket No. E,G999/M-07-1102 (Jan. 11, 2008), applicable local government ordinances, and Applicant's best practices. In instances when setbacks differ for the same feature, the most stringent setback distance is used.[117]

---

[109] *Id.* at 10-11.
[110] *Id.* at 11-12.
[111] *Id.* at 12.
[112] *Id.*
[113] *Id.*
[114] *Id.*
[115] Ex. 114 at 23 (SP Application).
[116] *See* Public Information Meeting Presentation at Slide 11 (June 16, 2020) (eDocket No. 20206-163958-02).
[117] Ex. 114 at 12 (SP Application).

## VI. Project Schedule (Wind Farm and T-Line)

87. The Project's commercial operation date (COD) is dependent on the completion of the interconnection process, permitting, and other development activities. Currently, Plum Creek expects that the Project's anticipated COD may occur in 2023.[118]

## VII. Summary of Public Comments

88. At the public hearings, five members of the public offered comments.[119]

89. Two commenters, Nathan Runke, Local 49 Operating Engineers[120] and Stacey Karels, Mankato Building & Construction Trades Group,[121] representing organized labor stated their support for the Project and the need for jobs in southwest Minnesota. They encouraged use of local, union labor. Mr. Burmeister responded that union labor is being considered, but contractors had not yet been selected.[122]

90. Jean Christoffels spoke on behalf of Murray County.[123] She asked that the Project ensure that a development agreement be executed between the Project and all counties and townships within the Project and for use of roads and public safety. Mr. Burmeister stated that Plum Creek anticipated entering into agreements with all counties and townships involved in the Project.[124]

91. Larry Chapman asked questions about the draft EIS content related to potential property value impacts.[125] Mr. Storm responded that DOC EERA performs a literature review regarding this issue, rather than a site-specific study in the area of the Project.[126]

92. Kevin Maas stated he is an affected property owner on the proposed Red Segment for the T-Line.[127] He is concerned that the Red Segment will have a significant impact on tourism in Walnut Grove, and that a wetland area on his property that lies within the Cottonwood River Alignment of Red Segment will be impacted.

93. During the course of these proceedings, approximately a dozen written comments were received from stakeholders, including agencies, local units of government (LGUs), the Clean Energy Organizations, LIUNA, and property owners along

[118] Ex. 131 at 3 (Applicant Comment).
[119] *See* 1 p.m. Public Hr'g Tr. (Feb. 16, 2021) (eDocket No. 20212-171352-03); 6 p.m. Public Hr'g Tr. (Feb. 16, 2021) (eDocket No. 20212-171352-06).
[120] 1 p.m. Public Hr'g Tr. at 23-25 (Feb. 16, 2021) (Runke).
[121] *Id.* at 25-26 (Karels).
[122] *Id.* at 24 (Burmeister).
[123] *Id.* at 28 (Christoffels).
[124] *Id.* at 28-29 (Burmeister).
[125] 6 p.m. Public Hr'g Tr. at 22-26 (Feb. 16, 2021) (Chapman).
[126] *Id.* at 23-26 (Storm).
[127] *Id.* at 27-31 (Maas).

the proposed routes, and others interested in the proceeding during the public hearing comment period.[128]

94. Comments regarding the Wind Farm were generally supportive.[129] The Clean Energy Organizations shared their interpretation of the Certificate of Need statute and implementing rule requirements, and their understanding of the renewable development cycle. In addition, the Clean Energy Organizations shared a copy of a business trade association letter encouraging the Midwest Governors Association and its governors to participate in the Midcontinent Independent System Operator, Inc. (MISO) planning process as additional evidence of growing need for renewable energy in the MISO region, particularly from C&I customers.[130] The Clean Energy Organizations urged the Commission to grant a Certificate of Need for the Project, contending that Applicant had met its burden to demonstrate a need for power to be generated by the Project.

95. Local 49 Operating Engineers submitted a written comment in favor of the Project, citing the local, union jobs the Project can provide.[131] Other commenters also referenced economic benefits stemming from the Project. For example, Earl and Judith Enstad commented that the tax dollars to be generated by the Project will enable Ann Township to maintain roads and provide high quality education to area students.[132] Linda and Dennis Fultz are landowners within the Project Area. They note that their community, Tracy, Minnesota, will see economic benefits from the Project, and they believe that the Project has been well designed to minimize environmental impacts.[133]

96. Several commenters opposed construction along the Red Segment.[134] These commenters expressed concerns regarding potential impacts to farm operations, wildlife and habitat, the cultural site at Walnut Grove, and the Cottonwood River crossing, among other concerns.[135] Lisa Dallenbach is opposed to the Project entirely because she is concerned about health impacts of transmission lines and impacts to wildlife; she states

---

[128] *See* 1 p.m. Public Hr'g Tr. (Feb. 16, 2021); 6 p.m. Public Hr'g Tr. (Feb. 16, 2021); Comment by LIUNA (Mar. 11, 2021) (eDocket No. 20213-171773-01); Comment by MDNR (Mar. 10, 2021) (eDocket No. 20213-171763-01); Comment by Clean Energy Organizations (Mar. 10, 2021) (eDocket No. 20213-171765-01); Comment by Brozek (Redwood County) (Mar. 4, 2021) (eDocket No. 20213-171589-02); Comment by Gordon (Mar. 3, 2021) (eDocket No. 20213-171547-02); Comment by Anderson (Mar. 10, 2021) (eDocket No. 20213-171736-03) Comment by Runke (Local 49 Operating Engineers) (Mar. 10, 2021) (eDocket No. 20213-171770-01); Batch 1 Comments (Mar. 9, 2021) (eDocket No. 20213-171677-03); Comment by Kassel (Mar. 5, 2021) (eDocket No. 20213-171611-01); Comment by Ellingson (Feb. 19, 2021) (eDocket No. 20212-171159-01); Comment by Dallenbach (Feb. 19, 2021) (eDocket No. 20212-171193-01).

[129] *See, e.g.*, Batch 1 Comments (Mar. 9, 2021) (eDocket No. 20213-171677-03).

[130] Comment by Clean Energy Organizations (Mar. 10, 2021) (eDocket Nos. 20213-171765-01, 20213-171765-02). The Clean Energy Organizations include the Minnesota Center for Environmental Advocacy, Fresh Energy, and Clean Grid Alliance.

[131] Comment by Runke (Local 49 Operating Engineers) (Mar. 10, 2021) (eDocket No. 20213-171770-01).

[132] Batch 1 Comments (Mar. 9, 2021) (eDocket No. 20213-171677-03).

[133] *Id.*

[134] *See, e.g.,* Comment by Ellingson (Feb. 19, 2021) (eDocket No. 20212-171159-01); Comment by Dallenbach (Feb. 19, 2021) (eDocket No. 20212-171193-02); 6 p.m. Public Hr'g Tr. at 27-31 (Maas); Comment by Gordon (Mar. 3, 2021) (eDocket No. 20213-171547-02).

[135] *See, e.g.,* Comment by Ellingson (Feb. 19, 2021) (eDocket No. 20212-171159-01); Comment by Dallenbach (Feb. 19, 2021) (eDocket No. 20212-171193-02); 6 p.m. Public Hr'g Tr. at 27-31 (Maas); Comment by Gordon (Mar. 3, 2021) (eDocket No. 20213-171547-02).

that she will never willingly relinquish her land for a transmission line. She specifically opposes construction of the Red Segment of the T-Line because it would be near her home and the Blue Segment because it is near the area where her son wishes to build a home in the future.[136] Charles Ellingson also owns property along the Red Segment. Among other concerns, he notes that he rents out the land and he believes that installation of poles for the T-Line in his field would depress the rent he receives.[137]

97. The MDNR commented to indicate its preference for the Blue Segment over the Red Segment due to the Blue Segment's reduced impacts to wildlife, wetlands, and sites of biodiversity significance.[138] The MDNR also recommended implementation of a permit condition that would require Applicant to avoid disturbance to uncultivated grasslands between May 15 and June 15 due to the presence of the Henslow's sparrow within the Project Area.[139]

98. Plum Creek submitted written comments advising on the status of its interconnection request with MISO. Plum Creek has two queue positions with MISO that could be used for the Wind Farm. The earlier queue position is for 414 MW and is part of the MISO West 2018 April interconnection study cycle. The second is for 600 MW and is part of the MISO West 2019 study cycle. Plum Creek withdrew its request in the 2018 cycle due to excessive costs. Plum Creek will pursue the latter request which will better align with the Project schedule. The 600-MW interconnection request will either be scaled down to 414 MW or split with another project.[140]

99. Plum Creek also responded to MDNR's comments regarding the Henslow's sparrow and recommended permit condition, agreeing to a permit condition that satisfies the MDNR's concern, as addressed further below.[141]

## VIII. Certificate of Need Criteria

100. A "large energy facility" is "any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system."[142]

101. A Certificate of Need is required for all large energy facilities.[143] Because Plum Creek proposes to build a project generating up to 414 MW, it must obtain a Certificate of Need from the Commission for this Project.[144]

---

[136] Comment by Dallenbach (Feb. 19, 2021) (eDocket No. 20212-171193-01).
[137] Comment by Ellingson (Feb. 19, 2021) (eDocket No. 20212-171159-01).
[138] Comment by MDNR (Mar. 10, 2021) (eDocket No. 20213-171763-01).
[139] *Id.*
[140] Comment by Plum Creek (Mar. 10, 2021) (eDocket No. 20213-171750-01).
[141] Plum Creek's Reply Comments-State Listed Bird Species (Apr. 6, 2021) (eDocket No. 20214-172620-01).
[142] Minn. Stat. § 216B.2421, subd. 2(1).
[143] Minn. Stat. § 216B. .243, subd. 2.
[144] *See id.*

102. Minn. Stat. § 216B.243 and Minn. R. ch. 7849 provide criteria for the Commission to consider in deciding whether to issue a Certificate of Need for the Project.

103. The Commission must determine whether Applicant has established that "demand for electricity cannot be met more cost effectively through energy conservation and load-management measures" and has "otherwise justified its need."[145] Under Minn. Stat. § 216B.243, subd. 3, there are ten factors relevant to this matter that the Commission must evaluate in assessing need for a facility,[146] as follows:

> (1) the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based;
>
> (2) the effect of existing or possible energy conservation programs under sections 216C.05 to 216C.30 and this section or other federal or state legislation on long-term energy demand;
>
> (3) the relationship of the proposed facility to overall state energy needs, as described in the most recent state energy policy and conservation report prepared under section 216C.18, or, in the case of a high-voltage transmission line, the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425;
>
> (4) promotional activities that may have given rise to the demand for this facility;
>
> (5) benefits of this facility, including its uses to protect or enhance environmental quality, and to increase reliability of energy supply in Minnesota and the region;
>
> (6) possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation;
>
> (7) the policies, rules, and regulations of other state and federal agencies and local governments;
>
> (8) any feasible combination of energy conservation improvements, required under section 216B.241, that can (i) replace part or all of the energy to be provided by the proposed facility, and (ii) compete with it economically;

[145] *Id.*, subd. 3.

[146] Minn. Stat. § 216B.243, subd, 3(11)-(12) are not relevant in this matter. Subdivision 3(11)-(12) relate to large energy facilities that generate electric power from nonrenewable energy sources.

(9) with respect to a high-voltage transmission line, the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota; [and]

(10) whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691 and 216B.2425, subdivision 7, and have filed or will file by a date certain an application for certificate of need under this section or for certification as a priority electric transmission project under section 216B.2425 for any transmission facilities or upgrades identified under section 216B.2425, subdivision 7.

104. In addition to addressing the need for the proposed facility, an applicant must address three specific "socioeconomic considerations": (1) socially beneficial uses of the output of the facility, including its uses to protect or enhance environmental quality; (2) promotional activities that may have given rise to the demand for the facility; and (3) the effects of the facility in inducing future development.[147]

105. Minn. Stat. § 216B.243, subd. 1, directs the Commission to adopt criteria to be used for an assessment of need. The Commission has adopted such criteria in Minn. R. 7849.0120. The Commission must evaluate the rule's factors to the extent that the Commission considers the factors applicable and pertinent to the proposed facility, and it must make specific written findings regarding each of the criteria.[148] Minn. R. 7849.0120 provides that the Commission must grant a Certificate of Need if the Commission determines that:

A. the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states, considering:

(1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;

(2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;

(3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;

[147] Minn. R. 7849.0240, subp. 2.
[148] Minn. R. 7849.0100.

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources;

B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;

(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;

(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and

(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives;

C. by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health, considering:

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;

(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;

(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and

(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality; and

D. the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the

facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.[149]

106. The Commission must also consider whether the applicant has complied with all applicable procedural requirements.[150]

## IX. Application of Certificate of Need Criteria to the Project

### A. The Probable Result of Denial (Minn. R. 7849.0120(A))

107. Under Minn. R. 7849.0120(A), the Commission must examine whether "the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states." The Commission considers multiple factors, including the forecasted need, available energy resources, and the advantages and disadvantages of utilizing alternative resources.[151]

108. The forecast of need does not focus exclusively on immediate needs. Where there is a "reasonably predicted demand" and the project is the most efficient way to meet it, Minn. R. 7849.0120(A) is met.[152]

109. As an Independent Power Producer (IPP), Plum Creek does not sell power directly to end-use (or retail) customers, but instead makes the energy available to wholesale power customers via the regional transmission system.[153] Wholesale power customers may be investor-owned, municipal, or cooperative utilities or other non-utility customers that purchase electricity in the wholesale market.[154] Because Plum Creek has applied to interconnect the Project to the MISO regional transmission system, it can serve customers not just in Minnesota, but also in the surrounding states.[155]

110. Plum Creek contends it has demonstrated that the denial of a Certificate of Need for the Project would result in adverse effects on the future electricity needed to meet state and regional demand and would deny utilities and non-utilities the opportunity to purchase 414 MW of clean, low-cost energy that would count toward satisfying renewable and/or other clean energy standards and goals.[156] It asserts that state legislative policy has sought to expand Minnesota's reliance on renewable energy.[157] It further contends that both utility and non-utility customers have also stated plans to increase reliance on renewable energy resources, including wind.[158]

---

[149] Minn. R. 7849.0120.
[150] Minn. R. 7854.1000, subp. 3 (2019).
[151] *In re Northern States Power Co*., No. A10-397, 2010 WL 4608342, at *5 (Minn. Ct. App. Nov. 15, 2020).
[152] *Id*.
[153] *See* Ex. 100 at 2 (CN Application).
[154] *Id.*
[155] *See* Ex. 123 at 5 (Burmeister Direct); Ex. 100 at 12 (CN Application).
[156] Ex. 100 at 10 (CN Application).
[157] *Id.* at 6-7.
[158] *Id.* at 4-5; Ex. 120 at 4-5 (Engelking Direct).

111. Plum Creek also notes that wind is one of the lowest cost forms of power and is currently cost competitive with coal and gas generation.[159] The large size of the Project also provides significant economies of scale with a competitive cost per MW of energy offered.[160]

112. DOC DER maintains that Applicant has not met its burden to show that demand for the Project exists, as described further below, and argues against issuance of a Certificate of Need for the Project.[161] DOC EERA did not take a position in whether a Certificate of Need should be issued, and it deferred to DOC DER's analysis of these issues.

### 1. Accuracy of the Applicant's Forecast of Demand for the Type of Energy that Would be Supplied by the Proposed Facility (Minn. R. 7849.0120(A)(1))

113. Minnesota Rule 7849.0120(A)(1) requires consideration of "the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility" when determining if denial of a Certificate of Need application would have an adverse effect.

114. This sub-factor correlates to Minn. Stat. § 216B.243, subd. 3(1), which requires the Commission to consider "the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based," in assessing whether need for a project exists.

115. Because Plum Creek is an IPP and does not have a utility "system" as defined in Minn. R. 7849.0010, subp. 29, Plum Creek requested an exemption from the forecast data requirements in Minn. R. 7849.0270 and instead offered to submit "regional demand, consumption, and capacity data from credible sources to demonstrate the need for the independently produced renewable energy that will be generated by the Project."[162] With the support of DOC DER, the Commission granted this exemption and use of alternative data for demonstrating demand for the energy supplied by the Project.[163]

[159] Ex. 300 at 14 (Zajicek Direct).
[160] Ex. 127 at 11 (Engelking Rebuttal).
[161] DOC DER Reply Brief at 8-9 (Apr. 6, 2021) (eDocket No. 20214-172630-01).
[162] Request for Exemption from Certain Application Content Requirements (Nov. 13, 2018) (eDocket No. 201811-147724-02.
[163] Order (Jan. 17, 2019) (eDocket No. 20191-149302-01).

### a. Public Policy Considerations

116. Minnesota and states around the region continue to pursue renewable energy goals and standards that must be satisfied.[164] Eleven of the MISO states, including Minnesota, currently have either mandated or voluntary renewable portfolio standards or policies, including renewable or clean energy objectives or standards that establish a specific percentage of retail energy sales that must come from renewable energy each year.[165] For example, Illinois requires certain utilities to obtain 25 percent of eligible sales from renewables by 2025.[166] Similarly, North Dakota has adopted the national "25 by 25" initiative, which establishes a goal of having not less than 25 percent of total energy consumed within the United States come from renewable resources by January 1, 2025.[167]

117. Pursuant to Minn. Stat. § 216B.1691, utilities in Minnesota are required to provide 25 percent of their total retail electric sales from eligible renewable resources by 2025.[168] Other policies target reductions in greenhouse gas emissions, which also promote increasing use of renewable energy.[169]

118. Under current state standards, total United States renewable portfolio standard demand will increase from 290 terawatt hours (TWh) in 2018 to 540 TWh in 2030.[170] Given existing renewable energy capacity, an additional 180 TWh increase in renewable resources will be required to meet demand through 2030.[171]

119. While sufficient capacity is available to meet certain state requirements, several states, including Minnesota, continue to evaluate policies to increase these goals and requirements.[172] The Minnesota legislature has considered, but has not yet passed, legislation on multiple occasions in recent legislative sessions to increase Minnesota's renewable energy requirements requiring utilities to obtain additional electricity from renewable sources beyond that which is required by current Renewable Energy Standard (RES), and to further reduce carbon from energy sources.[173]

120. DOC DER notes that Minnesota utilities are currently meeting or exceeding the goals for generation from renewable sources under Minn. Stat. § 216B.1691.[174] As a result, DOC DER maintains that the RES is of diminished relevance in a demand analysis.[175] DOC DER welcomes continued efforts toward decarbonization and additional

---

[164] Ex. 120 at 5 (Engelking Direct).
[165] *Id.* at 5-6.
[166] Ex. 100 at 7 (CN Application).
[167] *Id.*
[168] *Id.* at 6.
[169] *See, e.g.,* Minn. Stat. § 216H.02 (2020).
[170] Ex. 100 at 7 (CN Application).
[171] *Id.*
[172] *See, e.g.,* Ex. 135 (Governor Walz et al Announce Plan to Achieve 100 Percent Clean Energy in Minnesota by 2040).
[173] Ex. 100 at 7 (CN Application).
[174] Ex. 301 at 10 (Zajicek Surrebuttal).
[175] *Id.*

support for renewable energy.[176] It contends, however, that the state's policy goals and proposed legislation to increase the RES cannot be used to show demand for electricity to be produced by the Project exists because, in the absence of enacted legislation, these goals and policies are insufficiently concrete.[177]

### b. Planning by the Commission and Utilities

121. Because Plum Creek is an IPP that plans to sell the electricity and/or related environmental attributes produced by the Project at wholesale, traditional utilities are potential customers.[178]

122. The Commission and the utilities continue to set independent renewable energy goals, as well as to plan for additional requirements to reduce carbon from energy sources and an increase to the RES by seeking additional renewable energy sources above the requirements of the RES.[179]

123. For example, in 2019, the Commission recognized a need to begin planning transmission to meet renewable energy demands that extend beyond Minnesota's 25 by '25 Renewable Energy Standard.[180] The Commission asked the utilities to identify "gaps between the existing and currently planned transmission system and the transmission system that will be required to meet the companies' publicly stated clean energy goals" for each Minnesota utility that is a part of the Minnesota Transmission Owners.[181] In response, the Minnesota utilities reported the following clean energy goals to the Commission:

- Great River Energy: Serve its all-requirements member-owner cooperatives with energy that is 50 percent renewable by 2030.
- Minnesota Power: Deliver 50 percent renewable energy to customers by 2021.
- Minnesota Municipal Power Agency: 100 percent renewable energy when economical.
- Minnkota Power Cooperative: Committed to finding opportunities to reduce carbon emissions while maintaining system reliability.
- Xcel Energy: Goal to reduce carbon emissions 80 percent by 2030, with a vision to provide 100 percent carbon-free electricity to customers by 2050.

[176] *Id.* at 3-4.
[177] *See id.* at 4.
[178] Ex. 100 at 2 (CN Application).
[179] *Id.* at 7.
[180] Ex. 127 at 5 (Engelking Rebuttal).
[181] *Id.* at 4.

- Otter Tail Power Company: Project by 2022, customers will receive 30 percent of energy from renewables. Carbon emissions will be at least 30 percent below 2005 levels.

- Rochester Public Utilities: 100 percent renewable energy by 2030.

- Southern Minnesota Municipal Power Agency: 80 percent carbon free 2030.[182]

124. The Commission directed the transmission owners to start planning the necessary transmission to meet these goals.[183]

125. A review of utilities' integrated resource plans (IRPs), requests for proposals, and similar documents also demonstrates that utilities intend to seek additional renewable generation resources in the next several years.[184] A utility's commitment to purchase more renewable energy is an indicator that its present supply of renewable energy will not meet its future need.[185] Examples of utility companies with articulated need include:

i. Xcel Energy announced plans to reduce carbon emissions by 80 percent company-wide by 2030, and to provide 100 percent carbon-free electricity across its service territory by 2050. To reach this goal, Xcel Energy plans to eliminate all coal generation on its system by 2030 and to add 4,000 MW of renewable energy. Xcel Energy's supplemental preferred plan, filed June 30, 2020 in Docket E002/RP-19-368, states that it intends to add 2,250 MW of wind by 2034. While Xcel Energy's modeling shows new wind resources coming in 2032, Xcel Energy has previously purchased wind earlier than planned because of wind's economics.

ii. On May 11, 2020, Great River Energy filed a change of circumstances from its 2017 Resource Plan (Docker ET-2/RP-17-286) stating that it intended to acquire 1,100 MW of new wind resources by the end of 2023. This has not yet been evaluated by the Commission.[186]

126. Utilities expect to retire coal-based generating units across the MISO region, and renewable generation resources are expected to fill some of the resulting capacity needs.[187] While coal generation made up 73 percent of total generation in the MISO region in 2009, due to retirements, coal facilities are expected to supply only 36

[182] *Id.* at 4-5.
[183] *Id.* at 5.
[184] Ex. 100 at 5, 34 (CN Application). It should be noted that several utilities have not filed resource plans in the last three to five years but are scheduled to file in 2021. Ex. 127 at 10 (Engelking Rebuttal).
[185] *See* Ex. 100 at 5-7 (CN Application); Ex. 127 at 3-5 (Engelking Rebuttal).
[186] Ex. 100 at 5 (CN Application); Ex. 127 at 10 (Engelking Rebuttal).
[187] Ex. 100 at 34 (CN Application).

percent of MISO demand by 2030.[188] Aging and retirement of energy generation units impacts regional energy operations, resulting in less available capacity than the past, which reduces both redundancy and overall energy offered to the MISO system.[189] Given its economies of scale and wind powers efficiency and low cost, the Project is well-situated to meet these needs.[190]

127. DOC DER acknowledges that a shift toward renewable energy is occurring. It also concedes that Minnesota law regarding resource planning contains a preference for renewable energy generation and that the Project is consistent with that preference. DOC DER maintains, however, that utilities' expressed goals to purchase additional renewables do not establish demand for the Project.[191]

128. DOC DER analyzed prior wind farm dockets and determined that the Commission has, in the past, examined IRPs, purchase power agreements (PPAs), and biennial transmission reports to evaluate need.[192] DOC DER does not contend that a project must be identified in an IRP or have a PPA to obtain a Certificate of Need.[193] It maintains, however, that IRPs, PPAs, and transmission reports are a valuable tool for the Commission to use in analyzing demand.[194] Mr. Zajicek offered testimony that:

> The current set of approved utility IRPs state that little additional wind is needed in the near future. This indicates that the modeling performed in those [IRP] cases did not find that there was sufficient energy demand growth to merit new energy resources and that it does not make economic sense to close any existing facilities in favor of constructing a new replacement facility.[195]

129. DOC DER contends Applicant has not used reliable information from sources such as approved IRPs, PPAs, and transmission reports to establish demand for the electricity to be generated by the Project, and that the sources on which Applicant relies demonstrate only general need.[196]

130. Because it examined only approved IRPs, DOC DER did not credit Xcel Energy's June 30, 2020 supplemental preferred plan in Docket E002/RP-19-368, stating that it intends to add 2,250 MW of wind by 2034. Nor did it take into account statements made to the Commission about utilities' intentions that are not yet part of the IRP process.

---

[188] *Id.* at 11.
[189] *Id.*
[190] *See id.*
[191] Ex. 300 at 7-8 (Zajicek Direct); Ex. 301 at 3 (Zajicek Surrebuttal).
[192] Ex. 301 at 12-14; Evid. Hr'g Tr. at 37-38 (Feb. 17, 2021).
[193] DOC DER Reply Brief at 8.
[194] Ex. 301 at 12-14 (Zajicek Surrebuttal).
[195] *Id.* at 8.
[196] *Id.* at 11-15.

131. While statements of intention are not equivalent to an approved IRP or PPA, they are evidence of the direction that utilities are taking with energy development, and should not be disregarded, particularly given their consistency with public policy and law.

### c. Commercial and Industrial Customer Demand

132. In addition to utilities, C&I entities also are potential wholesale customers for energy generated by the Project.[197] Plum Creek is actively pursuing a PPA with C&I customers for the facility's output.[198] As of the time of the hearing, Plum Creek had not yet secured a PPA.[199]

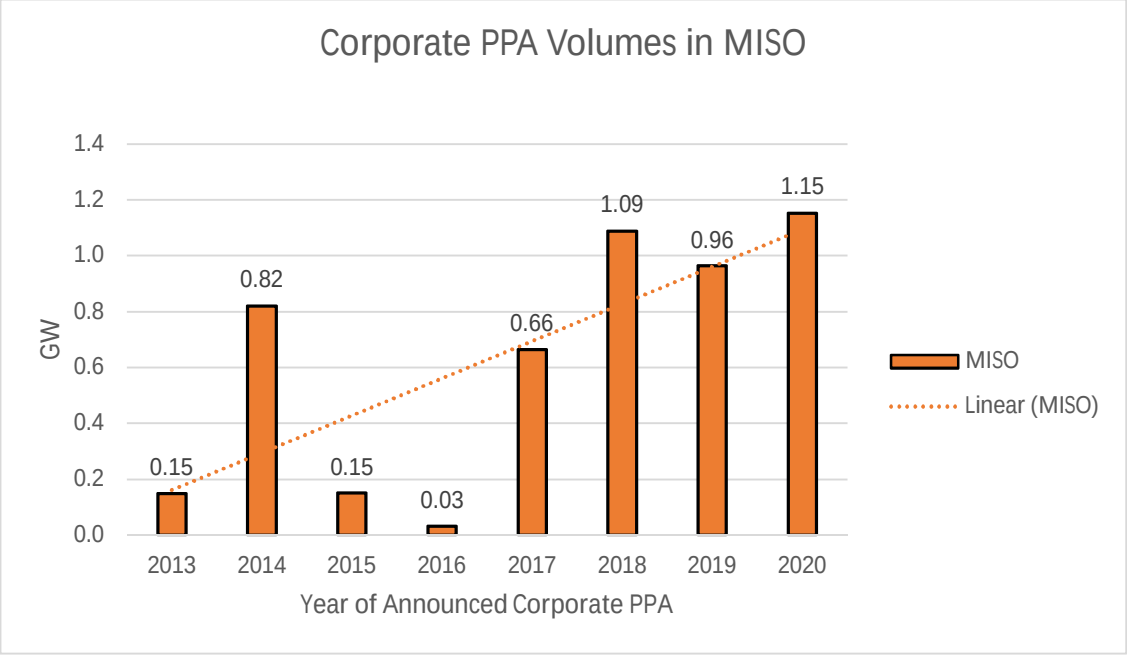
133. Because wind is now economically competitive with energy generation from coal and gas sources, and consumer preference for wind energy is also creating additional market demand, C&I demand for wind energy and other renewable energy has increased.[200] In a 2015 survey of 150 commercial customers with revenues greater than $250 million, 84 percent indicated that they planned to actively pursue or consider directly buying renewable energy.[201] More recent purchasing numbers bear out that prediction. According to a 2019 research report, corporate contracts accounted for 22 percent of 2018 PPAs for renewables in the United States.[202] C&I customers make up one of the fastest growing markets for renewable energy projects.[203] According to the Renewable Energy Buyers Alliance (REBA) Institute, nearly three-quarters of Fortune 100 companies have adopted sustainable and renewable energy goals.[204]

134. The Clean Energy Organizations submitted a public comment, including a letter from REBA to the Midwest Governors Association citing a Wood MacKenzie forecast that indicated sustainability goals of Fortune 1000 companies are expected to drive up to 15,500 MW of new renewables in the MISO footprint by 2030.[205]

135. Plum Creek provided evidence of growing renewable energy PPAs from 2016 to April 2020.[206] According to an article on which Applicant relies, the corporate renewables market is expected to reach 85 GW by 2030.[207] In support of finding demand for the Project, Plum Creek points to a sharp rise in the volume of corporate renewable

[197] Ex. 100 at 2 (CN Application).
[198] Ex. 134 (Plum Creek Response to DOC DER IR No. 2-c).
[199] *See id.*
[200] Ex. 100 at 5 (CN Application).
[201] *Id.* at 5-6.
[202] *Id.* at 6.
[203] *See id.*
[204] Ex. 127 at 7-8 (Engelking Rebuttal).
[205] Comment by Clean Energy Organizations at 5, Ex. 1 (Mar. 10, 2021) (eDocket Nos. 20213-171765-01, 20213-171765-02). The Wood McKenzie forecast discussed in this comment has not been offered into the record and the comment was filed after the contested case hearing. Therefore, the report cited by the Clean Energy Organizations has not been evaluated in connection with this case.
[206] Ex. 127 at 8, Schedule 2 (Engelking Rebuttal).
[207] Ex. 120 at 5 (Engelking Direct).

energy PPAs in MISO between 2013 and 2020.[208] The figure below shows the demand from 2013 to 2020—which has 1.15 gigawatts of announced corporate PPAs.[209]




136. Finally, in the event some or all of the 414 MW proposed in the Project are not contracted through a PPA, Applicant has indicated it may also sell directly into MISO.[210] DOC DER acknowledges that the Applicant would bear all financial risk in that circumstance, and that Minnesota ratepayers bear no risk for the Project.[211]

137. DOC DER contends, however, that the desire of C&I customers to purchase renewables is too generalized to support a finding that specific demand for the energy generated by the Project exists. DOC DER contends that questions remain about where companies are acquiring renewables to meet their goals and whether they have already met their goals.[212]

### d. Analysis of Forecast Data Issue

138. The Commission granted Plum Creek an exemption from the forecast data required in Minn. R. 7849.0270 and authorized Plum Creek to provide alternate data from

[208] Ex. 127 at 10-11 (Engelking Rebuttal).
[209] *Id.*
[210] Ex. 100 at 10 (CN Application).
[211] Ex. 301 at 13 (Zajicek Surrebuttal).
[212] Evid. Hr'g Tr. at 54-56 (Feb. 17, 2021).

credible sources on regional demand for renewable energy produced by IPPs.[213] DOC DER agreed Plum Creek could provide alternative data to satisfy this criteria.[214]

139. Plum Creek provided evidence, based on filings made with the Commission, that utilities in Minnesota intend to increase the proportion of renewable energy in their portfolios.[215] While the Project is not specifically identified in any currently approved IRP, as noted by Plum Creek, several utilities have not filed resource plans in the last three to five years and are scheduled to file in 2021.[216] DOC DER sought to review the most recent data possible in considering current IRP filings,[217] but acknowledges that if a utility files a new IRP it could indicate changed circumstances.[218] Therefore, existing approved IRPs may not adequately reflect the rapidly developing picture of demand for renewable energy generation.

140. Plum Creek also provided evidence demonstrating that wholesale energy purchasers, including utilities and C&I customers, have a growing demand for more renewable energy as companies act on clean energy and sustainability goals, even when those goals exceed legislated state energy policies.[219] To fulfill these needs, large wind projects like Plum Creek that can spread transmission costs over the energy produced by the Project to lower costs for consumers, will be critical to meeting this need.[220]

141. Plum Creek anticipates the most likely off-taker for power generated by the Project is a C&I customer in Minnesota or a neighboring state or a utility seeking to achieve a zero-emissions supply.[221] Given the likelihood that the power produced by the Project will be sold to a C&I customer, the absence of a PPA at this stage is not determinative of demand. As the DOC DER recognized, C&I customers unfamiliar with the Commission's process for granting a Certificate of Need may be hesitant to sign a PPA until regulatory permitting milestones have been met, creating a "chicken and egg thing where having a CN makes it much easier to sign potentially a PPA." [222]

142. While IRPs, PPAs, and transmission reports constitute evidence of demand, neither Minn. Stat. § 216B.243, nor Minn. R. 7849.0120, specifically require this type of evidence to support a finding of need. Additionally, though the DOC DER points out that IRPs, PPAs, and transmission reports are credible sources to support the Commission's determination, and this is true, the sources on which Plum Creek relies are also credible, and include Commission filings and data from MISO.

---

[213] Order (Jan. 17, 2019) (eDocket No. 20191-149302-01).
[214] *See generally* Ex. 300 (Zajicek Direct); Evid. Hr'g Tr. at 26-27 (Feb. 17, 2021).
[215] Ex. 127 at 4-5 (Engelking Rebuttal).
[216] *Id.* at 10.
[217] Evid. Hr'g Tr. at 49 (Feb. 17, 2021); Ex. 301 at 4-8 (Zajicek Surrebuttal).
[218] Evid. Hr'g Tr. at 49-50 (Feb. 17, 2021).
[219] Ex. 100 at 5-10 (CN Application); *see also* Ex. 120 (Engelking Direct); Ex. 127 (Engelking Rebuttal).
[220] Ex. 100 at 21 (CN Application); Ex. 300 at 14 (Zajicek Direct); Ex. 127 at 11-12 (Engelking Rebuttal).
[221] *See* Plum Creek Reply Brief at 3 (eDocket No. 20214-172625-05).
[222] Evid. Hr'g Tr. at 50 (Feb. 17, 2021).

143. Additionally, a showing of immediate need is not required.[223] The Court of Appeals has stated:

> Although there must be a need shown before MPUC may approve a project, there is no requirement that the need be imminent. Because certificates of need are granted based on future forecasts, it is within the MPUC's authority approve an upsized alternative when there is a foreseeable need to do so.[224]

144. DOC DER expressed that the Certificate of Need process protects Minnesota ratepayers, the environment, and landowners by ensuring that uneconomic or excess projects are not built, and noted its concern that without more concrete evidence of the type it identifies, uneconomic projects could be built where there is no need.[225] However, if granted a site permit, Applicant will be precluded from beginning "construction of [the] project until the permittee has obtained a power purchase agreement or some other enforceable mechanism for the sale of the power to be generated by the project."[226] DOC DER argues that the terms of the site permit do not bear on the Certificate of Need determination because a site permit follows the Certificate of Need and does not provide evidence related to need.[227] While DOC DER is correct on that point, Applicant is also correct when it notes that the site permit's express terms ensure the Project will not create the particular negative consequence identified by DOC DER.

145. Finally, though DOC DER argues that the evidence provided by Applicant to support demand is inadequate, its position is based upon an analysis of decisions the Commission has made in the past.[228] DOC DER acknowledges that it is within the Commission's purview to accept other information in conducting its analysis.[229]

146. Based upon the record, the Administrative Law Judge concludes Applicant has satisfied Minn. R. 7849.0120(A)(1), and that this factor weighs in favor of granting a Certificate of Need for the Project.

---

[223] Minn. R. 7849.0120(A); *Northern States Power Co*., 2010 WL 4608342, at *4-5; *see also In re the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for Certificates of Need for the CapX 345-kV Transmission Projects*, No. A09-1646, A09-1652, 2010 WL 2266138 (Minn. Ct. App. June 8, 2010).
[224] *In re Great River Energy*, 2010 WL 2266138, at *6.
[225] Ex. 300 at 15 (Zajicek Direct); Ex. 301 at 4 (Zajicek Surrebuttal); Evid. Hr'g Tr. at 41-42 (Feb. 17, 2021).
[226] Minn. R. 7854.1100, subp. 3; Ex. 113 (Draft Site Permit); Evid. Hr'g Tr. at 52-53 (Feb. 17, 2021).
[227] *See No Power Line, Inc. v. Minn. Env't Quality Council*, 262 N.W.2d 312, 326 (Minn. 1977) (stating "the statutory scheme established by the legislature obligates a utility proposing to construct a HVTL to apply first to MEA for a certificate of need").
[228] Evid. Hr'g Tr. at 51 (Feb. 17, 2021).
[229] *Id.*

### 2. Applicant's Existing or Expected Conservation Programs (Minn. R. 7849.0120(A)(2))

147. Minnesota Rule 7849.0120(A)(2) requires consideration of "the effects of the applicant's existing or expected conservation programs and state and federal conservation programs."

148. This sub-factor correlates to Minn. Stat. § 216B.243, subd. 3, which states that "no proposed large energy facility shall be certified for construction unless the applicant can show that demand for electricity cannot be met more cost effectively through energy conservation and load management."

149. Similarly, Minn. Stat. § 216B.243, subd. 3(2) requires that the Commission consider the effect of existing or possible energy conservation programs under Minn. Stat. §§ 216C.05-.30, this section, or other federal or state legislation on long-term energy demand.

150. Minn. Stat. § 216B.243, subd. 3(8), provides that the Commission, in assessing need, shall consider any feasible combination of energy conservation improvements, required under Minn. Stat. § 216B.241, that can: (i) replace part or all of the energy to be provided by the proposed facility; and (ii) compete with it economically.

151. Likewise, Minnesota Rule 7849.0290 provides additional details on the information the applicant is to include on conservation programs.

152. Plum Creek is not a utility and does not have a system or retail customers to implement conservation projects.[230] In its January 17, 2019 Order, the Commission granted Plum Creek an exemption from filing requirements related to conservation programs.[231]

153. As a result, the factors found in Minn. R. 7849.0120(A)(2), .0290, and Minn. Stat. § 216B.243, subd. 3, 3(2), 3(8), are not relevant to a determination by the Commission on the CN Application.

### 3. Promotional Practices of Applicant that May Have Given Rise to the Increase in Energy Demand (Minn. R. 7849.0120(A)(3))

154. Minnesota Rule 7849.0120(A)(3) requires consideration of the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974.

155. This sub-factor correlates to Minn. Stat. § 216B.243, subd. 3(4), which requires the Commission, in assessing need, to consider "promotional activities that may have given rise to the demand for this facility."

[230] Ex. 100 at 29 (CN Application).
[231] Order (Jan. 17, 2019) (eDocket No. 20191-149302-01).

156. Applicant did not engage in promotional activities to give rise to the Project.[232] In its January 17, 2019 Order, the Commission granted Plum Creek an exemption from the requirement to file information regarding promotional activities.[233]

157. As a result, the factors articulated in Minn. R. 7849.0120(A)(3) and Minn. Stat. § 216B.243, subd. 3(4), are not relevant to a determination regarding a Certificate of Need for the Project.

#### 4. Ability of Current Facilities and Planned Facilities Not Requiring a Certificate of Need to Meet the Future Demand (Minn. R. 7849.0120(A)(4))

158. Minn. R. 7849.0120(A)(4) requires consideration of "the ability of current facilities and planned facilities not requiring Certificates of Need to meet the future demand." Alternatives not requiring a Certificate of Need can be either generation or transmission facilities.

159. This sub-factor correlates, in part, to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission to consider "possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation."

160. Minn. R. 7849.0340 requires the production of data for the alternative of "no facility," including a discussion of the impact of this alternative on the applicant's generation and transmission facilities, system, and operations. As an IPP, Applicant does not have a system, nor does it have other generation or transmission facilities in Minnesota. The Commission granted Applicant's request for an exemption from the filing requirement of Minn. R. 7849.0340, and allowed Applicant to "submit data reasonably available to it regarding the impact on the wholesale market of the 'no facility' alternative."[234]

161. Existing facilities and other non-build alternatives are not available to meet future demand.[235] The Project will increase the amount of energy available for purchase on the wholesale market that will satisfy clean energy standards.[236] Not building a facility would result in a lost opportunity for utilities and non-utility customers to purchase the

[232] Ex. 100 at 8 (CN Application).
[233] Order (Jan. 17, 2019) (eDocket No. 20191-149302-01).
[234] Order, *In re the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray and Redwood Counties, Minnesota*, No. IP-6997/CN-18-699 (Jan. 17, 2019) (eDocket No. 20191-149302-01); Request for Exemption from Certain Application Content Requirements (Nov. 13, 2018) (eDocket No. 201811-147724-02).
[235] Ex. 100 at 26 (CN Application).
[236] *Id.*

electricity generated by the Project to satisfy RES and other clean energy standards or goals.[237]

162. The Project also has the advantage of economies of scale not available to smaller, non-CN facilities.[238] To secure PPAs with either a utility or non-utility customer, Applicant will have to compete against alternatives, including non-CN facilities, at that time.[239] In both circumstances, the potential customers will evaluate the projects attributes and price against those alternative options.[240]

163. DOC DER contends that the incentives for competition for PPAs are slightly different for private purchasers or non-rate-regulated utilities (such as cooperative or municipal utilities) and public utilities.[241] While private purchasers and non-rate-regulated utilities have an incentive to minimize the amount they are paying, these same incentives do not necessarily apply to public utilities where power purchase costs are passed on to rate payers.[242] The Commission, however, requires that PPAs for public utilities be reviewed to ensure the agreed upon cost is reasonable.[243] Therefore, DOC DER agrees that a PPA purchaser would likely compare the project to alternative options, including non-CN facilities.[244]

164. In the event no PPA is signed or the Project is sold to a non-utility customer, the electricity generated would be sold in the MISO wholesale market.[245] In those circumstances, the Project would be eligible for a complete exemption from the CN requirements under Minn. Stat. § 216B.243, subd. 8(7).

165. Applicant has sufficiently addressed Minn. R. 7849.0120(A)(4), .0340, and Minn. Stat. § 216B.243, subd. 3(6). These factors weigh in favor of granting a Certificate of Need for the Project.

### 5. The Effect of the Proposed Facility, or a Suitable Modification, in Making Efficient Use of Resources (Minn. R. 7849.0120(A)(5))

166. Minn. R. 7849.0120(A)(5) requires consideration of "the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources."

167. No fuel will be burned in the production of energy at the Project, and wind is a highly-efficient and cost-effective resource for the generation of energy.[246] Because of its large size, Plum Creek is sized to take advantage of economies of scale associated

---

[237] *Id.*
[238] *Id.*; Ex. 300 at 12-13 (Zajicek Direct).
[239] Ex. 100 at 26 (CN Application); Ex. 300 at 12-13 (Zajicek Direct).
[240] Ex. 100 at 26 (CN Application).
[241] Ex. 300 at 11 (Zajicek Direct).
[242] *Id.*
[243] *Id.*
[244] *Id.*; Ex. 100 at 26 (CN Application).
[245] Ex. 100 at 10 (CN Application).
[246] *Id.* at 30.

with a commercial wind project.[247] At 414 MW, the Project is cost competitive on a per MW basis and can meet the needs of a load-serving utility or a C&I customer.[248] The voltage of the T-Line also takes advantage of economies of scale—the 345 kV voltage minimizes losses and increases the percentage of the energy generated that is delivered to end users.[249]

168. Applicant has satisfied Minn. R. 7849.0120(A)(5), and this factor weighs in favor issuance of a Certificate of Need.

### 6. The T-Line Satisfies the Factors in Minn. R. 7849.0120(A)

169. In addition to the large energy generating facility, the Project's proposed 345 kV T-Line provides sufficient and necessary voltage for the energy that will be generated by the Project.

170. If a T-Line is not built, the generation from the wind farm would have no outlet; the wind farm would not be financially viable, and the Project would not be built.[250] Transmission voltages greater than 345 kV, while technically feasible, are in excess of what is required to connect the wind farm to the grid and would have greater costs and impacts than the proposed 345 kV transmission Project.[251] Transmission alternatives that connect the Wind Farm to the grid at a lower voltage are feasible and available, although they would have higher line losses, would subject the Wind Farm to a higher risk of curtailment, and may be more expensive than the proposed 345 kV transmission Project.[252] DOC DER in direct testimony concluded that the Project's proposed T-Line is reasonably sized.[253]

171. The T-Line also interconnects with the Brookings-to-Hampton line, at a location where no existing T-Line exists.[254] Mr. Zajicek confirms that this line has been "identified by MISO as a particularly valuable point to interconnect further energy resources."[255] Wind generation development is continuing in southwest Minnesota in the area of the Project. The planned additional capacity on the 345 kV line could provide transmission support for that development.[256]

### 7. Conclusions Regarding the Factors in Minn. R. 7849.0120(A)

172. The Administrative Law Judge determines Applicant has satisfied each of the five sub-factors of Minn. R. 7849.0120(A). The subfactors in Minn. R. 7849.0120(A)(1), (4)-(5) weigh in favor of issuance of a Certificate of Need for the Project.

---

[247] *Id.* at 21.
[248] *Id.* at 12.
[249] *Id.* at 30; Ex. 127 at 11-12 (Engelking Rebuttal).
[250] Ex. 100 at 27, 30 (CN Application).
[251] *Id.* at 30.
[252] *Id.*; Ex. 119 at 3 (Kuvaas Direct).
[253] Ex. 300 at 18 (Zajicek Direct).
[254] Ex. 100 at 2 (CN Application).
[255] Ex. 300 at 18 (Zajicek Direct); *see also* Ex. 116 at 3-4 (Porter Direct).
[256] Ex. 116 at 3-4 (Porter Direct).

The subfactors in Minn. R. 7849.0120(A)(2)-(3) are not relevant to the Project and, therefore, do not weigh in favor of or against granting a Certificate of Need.

173. The Commission must consider the effects of a denial of the certification of need on the applicant, its customers, and the people of Minnesota and neighboring states. The record demonstrates there are adverse effects of denying a permit to the Project, including the risk that wholesale customers across the MISO market—including utilities and C&I customers—will be deprived of clean, efficient, and cost-efficient energy that can also be used to meet current and future renewable energy obligations; the loss of local economic benefits; and the potential that if the Project is not built the "power it would have produced may be replaced with a non-renewable energy resource."[257]

174. Based upon the specific factors delineated above, Applicant has demonstrated that there is a reasonably predicted need for low-cost renewable energy, both in the short and long-term, in Minnesota and in neighboring states, and for utility and non-utility customers. DOC DER agrees, that due to its size, the Project is a highly efficient and cost-effective resource to meet those energy demands.[258]

175. It is also undisputed that the Project's proposed T-Line meets the needs of the Project and may provide support for future wind development in that area.

### B. Demonstration of a More Reasonable and Prudent Alternative to the Proposed Facility (Minn. R. 7849.0120(B))

176. To grant a Certificate of Need, Minn. R. 7849.0120(B) requires that "a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record."

177. This factor correlates to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission to consider "possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation."

178. The Commission shall consider only those alternatives proposed before the close of the public hearing and for which there exists substantial evidence on the record with respect to the criteria listed in Minn. R. 7849.0120.[259]

179. Applicant and DOC DER disagree about the allocation of the burden to demonstrate a more reasonable and prudent alternative to the proposed facility.

180. Applicant contends its burden of proof is met by providing evidence establishing the needs and showing that the proposed Project is a reasonable and prudent way to satisfy the articulated needs. It maintains the burden falls on other parties

[257] Final EIS at 33-34 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[258] Ex. 300 at 14 (Zajicek Direct).
[259] Minn. R. 7849.0110.

to prove that any alternative they wish to sponsor is: (i) sufficiently presented in the record to be considered, and (ii) more reasonable and prudent than the applicant's proposal. Applicant asserts the rule requires opponents of the proposed Project to come forward and establish the existence and characteristics of a more reasonable and prudent alternative.[260]

181. DOC DER contends that the applicable rule in this case differs from the Commission's rules for oil and gas pipelines, which require "parties or persons other than the applicant" to demonstrate the existence of a more reasonable and prudent alternative.[261] DOC DER points out that Minn. R. 7849.0120(B) makes no reference to other persons or parties. DOC DER contends that the absence of this language leaves the burden to rest upon Applicant to produce evidence for the Commission to consider regarding alternatives to the proposed Project.

182. It is true that Minn. R. 7849.0120 does not specifically reference the role that other parties or persons may play in advancing evidence regarding alternatives to a proposed project. The Administrative Law Judge determines, however, that the better reading of the rule acknowledges that the proponent of such alternatives, and the bearer of the burden to establish that a more reasonable and prudent option exists, is not the applicant.

183. Minn. R. 7849.0110 contains gate-keeping requirements for consideration of a more reasonable and prudent alternative. For the Commission to consider an alternative, the alternative must be proposed before the close of the public hearing and substantial evidence must exist in the record regarding each part of the criteria in Minn. R. 7849-0120. Therefore, to apply the rule as argued by DOC DER, Applicant would be required to provide substantial evidence regarding an alternative to its Proposed facility prior to the close of the public hearing.[262] While Applicant does review potential alternatives in connection with its analysis offered to the Commission, applying the burden to Applicant in this context would require Applicant to offer up a second, fully-justified alternative to the Project it seeks to build so that the Commission could consider it. As a practical matter, it is untenable to place this burden upon the Applicant. The Applicant bears the burden to establish the need for its proposed project and other parties or participants may offer an alternative to that proposed Project for the Commission's consideration.

---

[260] "This regulatory scheme is simply a practical way to prevent the issuance of a certificate of need when there is a more reasonable and prudent alternative to the proposed facility without requiring the applicant to face the extraordinary difficulty of proving that there is not a more reasonable and prudent alternative." *See In re the Application of the City of Hutchinson*, No. A03-99, 2003 WL 22234703, at * 7 (Minn. Ct. App. Sept. 23, 2003) (interpreting parallel pipeline rule under Certificate of Need statute); *see also Peterson v. Mpls. St. Ry.*, 226 Minn. 27, 33, 31 N.W.2d 905, 909 (1948) (burden of producing sufficient evidence on specific issues); George A. Beck, MINN. ADMIN. PROCEDURE, § 10.3.1 (2d ed. 1998).

[261] *See* Minn. R. 7855.0120(B) (2019).

[262] Minn. R. 7849.0110.

184. In connection with its CN Application, Applicant analyzed multiple alternatives for meeting the identified needs. There is no dispute that no reasonable and prudent alternative was proposed or demonstrated.

### 1. Appropriateness of the Size, Type, and Timing of the Proposed Facility Compared to a Reasonable Alternative (Minn. R. 7849.0120(B)(1))

185. Minn. R. 7849.0120(B)(1) requires consideration of "the appropriateness of the size, type, and timing of the proposed facilities relative to reasonable alternatives." Each of these three categories of alternatives is discussed below.

#### a. Size

186. With respect to wind projects, the Commission has evaluated the size of the Project in relation to the overall state and regional need for renewable energy.[263] The record demonstrates that the regional need for renewable energy in the coming years exceeds the amount of energy to be supplied by the Project.[264] DOC DER agrees that the Wind Farm will likely take advantage of economies of scale.[265] In addition, it is undisputed that the Project will generate electricity at a lower cost per kilowatt hour than would other possible renewable energy options, such as solar and biomass.[266]

187. As to the T-Line, the 345 kV voltage T-Line is the appropriate size to efficiently deliver the energy from the Wind Farm and to provide capacity for future generation.[267] It is the primary voltage for high voltage lines in Minnesota, including for the CapX2020 project. Plum Creek also conducted analysis showing that the Wind Farm will generate approximately 730 amps on a 345 kV line, within its allowable ampacity.[268] By contrast, the only other size of T-Line in use in the area—a 115 kV voltage line—is not a reasonable alternative because it is not designed to carry the amount of energy that will be generated by the Wind Farm, would be more costly than a 345 kV interconnection on a capital cost basis and also would be less efficient, resulting in higher energy losses.[269]

#### b. Type

188. With regard to the type of facility, the Commission granted Applicant an exemption from Minn. R. 7849.0250(B) with respect to evaluating fossil fuels, purchased power, upgrades to existing resources, new transmission, and no build alternatives. For type alternatives, Applicant analyzed the following alternatives to the wind farm: (1) solar power; (2) hydropower; (3) biomass; (4) emerging technologies; (5) pumped storage; (6)

---

[263] Ex. 100 at 11-12 (CN Application).
[264] *Id.* at 12; Ex. 120 at 4-6 (Engelking Direct).
[265] Ex. 100 at 21 (CN Application); Ex. 300 at 13-14 (Zajicek Direct).
[266] Ex. 100 at 12 (CN Application); Ex. 300 at 12, 14 (Zajicek Direct).
[267] Ex. 100 at 12 (CN Application); Ex. 116 at 3 (Porter Direct); Ex. 119 at 2-3 (Kuvaas Direct).
[268] Ex. 116 at 3 (Porter Direct).
[269] *Id.*; Ex. 100 at 12 (CN Application); Ex. 119 at 2-3 (Kuvaas Direct).

compressed air; (7) superconducting magnets; (8); hydrogen and fuel cells; (9) battery storage; (10) non-CN facilities; and (11) combinations.

189. The Applicant determined that none of these types of alternatives was a more reasonable and prudent alternative to the proposed Project, either because: (1) the alternative was not commercially feasible; (2) the alternative was not reliable; (3) the alternative was a complimentary technology and not a true substitute; and/or (4) the alternative was not as cost-effective.[270]

190. DOC DER agrees that "Plum Creek is taking advantage of economies of scale and currently available tax incentives to off-set the costs of the Project. The information on alternatives that Plum Creek provided in its CN Application and conclusions drawn appear to be reasonable . . . ."[271]

191. With regard to the T-Line, the Applicant analyzed the following type alternatives: (1) upgrading existing transmission lines or generating facilities; (2) transmission lines with different voltages, numbers, sizes, and types of conductors; (3) transmission lines with different terminals or substations; (4) double circuiting of existing transmission lines; (5) use of a DC transmission line; (6) undergrounding; and (7) reasonable combinations of factors.[272]

192. Applicant determined that none of the alternatives was more reasonable and prudent, either because: (1) the alternative did not address the need (either in full or in part) to transfer generated electricity to the Brookings-to-Hampton 345 kV t-Line; or (2) did not provide comparable economic benefits as the Project.[273]

193. DOC DER agrees that the proposed type and size of the proposed T-Line are appropriate and recommended Commission approval.[274]

### c. Timing

194. The "timing" of a project for purposes of Minn. R. 7849.0120(B)(1) refers to the proposed on-line date for the project.

195. The Project is expected to be on-line and operational by the end of 2023, depending on completion of regulatory approvals, securing a power purchaser, resolution of an issue related to the North American Aerospace Defense Command (NORAD), which is discussed further below, and the MISO interconnection process.[275] Increasing the availability of low-cost renewable resources in this timeframe will help facilitate the

[270] Ex. 100 at 23-28 (CN Application); Ex. 120 at 6 (Engelking Direct).
[271] Ex. 300 at 14 (Zajicek Direct).
[272] Ex. 100 at 30-33 (CN Application).
[273] *Id.*
[274] Ex. 300 at 17-19 (Zajicek Direct).
[275] Ex. 131 at 3 (Plum Creek Comments on DEIS).

replacement of retiring generators and further transition the generation fleet to cleaner, renewable energy resources.[276]

#### d. Conclusions Regarding Size, Type, and Timing

196. The size, type, and timing of the Project are superior when compared to reasonable alternatives.

197. The factors articulated in Minn. R. 7849.0120(B)(1) weigh in favor of issuance of a Certificate of Need, as no more reasonable alternative has been demonstrated by a preponderance of the evidence.

### 2. The Cost of the Proposed Facility and Energy to Be Supplied by the Proposed Facility compared to Reasonable Alternatives (Minn. R. 7849.0120(B)(2))

198. Minn. R. 7849.0120(B)(2) requires consideration of "the cost of the proposed facility and the cost of the energy to be supplied by the proposed facility as compared to the costs of the reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives."

199. Wind continues to be among the most practical of all renewable generation technologies. Applicant provided data from the 2018 Lazard Levelized Cost of Energy, showing that wind has lower levelized costs per kilowatt hour than other renewable energy options, such as solar and biomass.[277] Plum Creek does not currently have a PPA, but believes these low costs would favor execution of a PPA by long-term purchasers.[278] DOC DER agrees that wind energy is one of the lowest cost forms of power and is currently competitive with coal and gas generation.[279] DOC DER also generally agrees with Plum Creek that the project's large size will likely provide economies of scale.[280]

200. As an IPP, Applicant also bears the financial risk for securing purchasers of the power, not the State of Minnesota or ratepayers.[281]

201. The factors in Minn. R. 7849.0120(B)(2) weigh in favor of issuance of a Certificate of Need, as no more reasonable alternative has been demonstrated by a preponderance of the evidence.

---

[276] Ex. 100 at 12 (CN Application).
[277] *Id.* at 27.
[278] *Id.* at 12.
[279] Ex. 300 at 14 (Zajicek Direct).
[280] *Id.* Note that DOC DER contends that Applicant has not quantified the impact of the economies of scale with specificity regarding cost. DOC DER, however, agrees that this factor weighs in favor of a finding that no more reasonable and prudent alternative has been demonstrated in this matter.
[281] *Id.*

### 3. Effects of the Proposed Facility on the Natural and Socioeconomic Environments Compared to Reasonable Alternatives (Minn. R. 7849.0120(B))

202. Minn. R. 7849.0120(B)(3) requires consideration of "the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives."

203. The Applicant submitted information showing minimal impacts on socioeconomic resources impacts.[282] Approximately 83 to 86 acres of agricultural land will be permanently removed from production for the Wind Farm, and the areas surrounding each turbine will still be able to be farmed.[283] Similarly, the areas around each transmission post can continue to be farmed.[284] Less than one half acre of cultivated cropland will be impacted by T-Line structures.[285] Project construction will not negatively impact leading industries within the Project Area.[286] There is no indication that any minority or low-income population is concentrated in any one area of the Project.[287]

204. The DOC EERA prepared an EIS for the Project that considers the natural and socioeconomic effects of the Project and alternatives, which found:

> The proposed wind farm is consistent and compatible with Cottonwood, Murray, and Redwood counties' respective comprehensive plan goals (Table 17) to conserve farmland and natural resources and support economic and sustainable development. The proposed wind farm will be compatible with the rural and agricultural character of the counties.[288]

205. DOC EERA cited specific benefits of the Project, including approximately 250 construction personnel; 14 permanent personnel for operations and maintenance of the Project; and additional income for the local economy through circulation and recirculation of dollars paid out by Applicant for business expenditures.[289]

206. DOC EERA also found that the Project will provide landowners and farmers with opportunities for revenue diversity. Lease and easement payments provide long-term landowner income and revenue diversification over the life of the Project.[290]

207. Long-term beneficial impacts to the tax base of each county, as a result of the construction and operation of the Project, will have an additional positive impact on the local economy in this area of Minnesota. In addition to the creation of jobs and

---

[282] *Id.* at 13.
[283] Ex. 114 at 95 (SP Application).
[284] Ex. 100 at 74 (CN Application).
[285] *Id.* at 13.
[286] *Id.* at 74.
[287] *Id.* at 13.
[288] Final EIS at 73 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[289] *Id.* at 81.
[290] *Id.*

personal income, the Project will pay a Wind Energy Production Tax to the local units of government of $0.0012 per kilowatt hour of electricity produced, resulting in annual Wind Energy Production Tax revenue from approximately $1.75 million to $2 million.[291] On November 5, 2019, the Redwood County Board of Commissioners provided a letter of support for the Project, citing significant economic development and long-term financial benefit to the area.[292]

208. Plum Creek will form the "Plum Creek Community Fund," a 501(c)(3) organization for the purpose of engaging in and contributing money to the support of charitable activities within the communities near the Project. The Project will contribute $82,800 annually over twenty years to the Plum Creek Community Fund to support charitable activities within the neighboring communities. The funds will be administered by a volunteer board of directors consisting of, but may not be limited to, participating landowners, township officials, and one at-large community member.[293] The Plum Creek Community Fund will help ensure that the entire community surrounding the Project, not just the participating landowners, see benefits from construction and operation of the Project.[294]

209. According to DOC EERA, the socioeconomic impacts of a generic wind facility of the same size or a same-sized solar facility would be similar to those of the Project.[295]

210. Applicant also demonstrated that the Project would impose minimal environmental impacts, especially as compared to a fossil-fuel based facility. The Project will not release carbon dioxide, sulfur dioxide, nitrogen oxides, mercury, or particulate matter. It will not require water for power generation and will not discharge wastewater containing any lead or chemicals during operation. It will produce energy without the extraction, processing, transportation, or combustion of fossil fuels. The Project will permanently impact less than one-quarter of one percent of the total acreage within the Project's boundaries and is designed to minimize environmental impacts.[296]

211. DOC EERA found that the Wind Farm would create human and environmental impacts similar to or less than other large wind and renewable projects located in Minnesota.[297] It also agreed that the impacts to farmland and soil during construction of the Project will be minimal and temporary, and that the presence of the Project "is not expected to significantly impact agricultural land use or the general character of the area."[298] Overall, DOC EERA did not find any significant environmental impacts as a result of the Project.

---

[291] Ex. 100 at 14 (CN Application).
[292] Comment by Redwood County Board of Commissioners (Dec. 13, 2019) (eDocket No. 201912-158307-02).
[293] Ex. 100 at 8 (CN Application).
[294] Final EIS at 33 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[295] *Id.* at 82.
[296] Ex. 100 at 13 (CN Application).
[297] Final EIS at 22-27 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[298] *Id.* at 119.

212. The factors found in Minn. R. 7849.0120(B)(3) weigh in favor of issuing a Certificate of Need, as no more reasonable and prudent alternative has been demonstrated.

#### 4. Expected Reliability of the Proposed Facility Compared to Reasonable Alternatives (Minn. R. 7849.0120(B)(4))

213. Minn. R. 7849.0120(B)(4) requires consideration of "the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives."

214. This sub-factor correlates, in part, to Minn. Stat. § 216B.243, subd. 3(9), which requires consideration of "the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota."

215. Wind is a proven and reliable resource. The Project will be available at least 97 percent of the time, consistent with other utility-scale wind projects.[299]

216. Thus, the factors found in Minn. R. 7849.0120(B)(4) weigh in favor of issuance of a Certificate of Need, as no more reasonable and prudent alternative has been demonstrated.

#### 5. Conclusions Regarding Minn. R. 7849.0120(B)

217. No more reasonable and prudent alternative to the proposed Project that satisfies the requirements of Minn. R. 7849.0110, .0120, has been demonstrated by a preponderance of the evidence.

218. The four sub-factors of Minn. R. 7849.0120(B) weigh in favor of granting a Certificate of Need for the Project.

### C. Benefits to Society Compatible with Natural and Socioeconomic Environments, Including Human Health (Minn. R. 7849.0120(C))

219. Minn. R. 7849.0120(C) requires that "by a preponderance of evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health."

#### 1. The Relationship of the Proposed Facility or Suitable Modification to Overall State Energy needs (Minn. R. 7849.0120(C)(1))

220. Minn. R. 7849.0120(C)(1) requires consideration of "the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs."

[299] Ex. 100 at 28 (CN Application).

221. This factor considers similar evidence to the inquiry conducted under Minn. R. 7849.0120(A), but related only to the needs of Minnesota.

222. Plum Creek contends that, states, utilities, and C&I customers continue to require renewable energy to meet renewable and other clean energy standards, their own clean energy goals, and consumer demand.

223. Consistent with its position regarding Minn. R. 7849.0120(A)(1), DOC DER maintains that Applicant's evidence is not specific or detailed enough, and that the evidence does not pertain sufficiently to regional or national trends, to establish future energy demand.

224. The Administrative Law Judge determines that Applicant has satisfied this factor for the same reasons expressed above in the analysis of Minn. R. 7849.0120(A)(1).

### 2. The Effects of the Proposed Facility or a Suitable Modification Upon the Natural and Socioeconomic Environments Compared to Not Building the Facility (Minn. R. 7849.0120(C)(2))

225. Minn. R. 7849.0120(C)(2) requires consideration of "the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility."

226. While not building the Project would avoid some human and environmental impacts, it could: (1) reduce the state's ability to meet current and future renewable energy objectives, (2) result in the loss of economic benefits in the Project Area, and (3) result in the possible negative impact of providing replacement electricity from a non-renewable energy source.[300]

### 3. The Effects of the Proposed Facility or a Suitable Modification in Inducing Future Development (Minn. R. 7849.0120(C)(3))

227. Minn. R. 7849.0120(C)(3) requires consideration of "the effects of the proposed facility, or a suitable modification thereof, in inducing future development."

228. The Project is not expected to directly affect development in Cottonwood, Murray, and Redwood Counties. However, additional wind energy infrastructure in the Project Area may nonetheless provide significant benefits to the local economy and local landowners. As noted above, the Project is estimated to provide annual production tax revenues ranging from approximately $1.75 million to $2 million. Plum Creek is committed to creating an independently run community fund and providing that fund with $82,800 annually. At the same time, it will also contribute to reducing price volatility for the energy on which Minnesota and neighboring states rely, due to the nature of wind energy's independence from fluctuating fuel prices.[301]

---

[300] *Id.* at 14; Final EIS at 33-34 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[301] Ex. 100 at 8-9 (CN Application).

229. In addition, landowners in the Project Area will benefit from annual lease payments. The Project will provide employment for approximately 250 personnel during construction, and 14 permanent personnel. Additional wind energy infrastructure will also provide an additional source of revenue to the counties and townships in which the Project is sited.[302]

#### 4. The Socially Beneficial Uses of the Output of the Proposed Facility or a Suitable Modification Including Its Uses to Protect or Enhance Environmental Quality (Minn. R. 7849.0120(C)(4))

230. Minn. R. 7849.0120(C)(4) requires consideration of "the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality."

231. This sub-factor correlates to Minn. Stat. § 216B.243, subd. 3(5), which, in relevant part, requires the Commission to consider "the benefits of this facility, including its uses to protect or enhance environmental quality."

232. Applicant showed that the Project will produce affordable, clean, renewable energy that will meet energy demands and renewable and other clean energy standards. The Project is expected to produce emissions-free energy to meet the energy needs of consumers in Minnesota and neighboring states. As discussed above, the local economy will also benefit from job creation, landowner lease payment for turbine siting, production taxes, and local spending.[303]

233. The record weighs in favor of concluding that the Project will provide benefits to society compatible with protecting the natural and socioeconomic environments, satisfying Minn. R. 7849.0120(C)(4).

### D. Demonstration That the Facility Will Fail to Comply with Relevant Policies, Rules, and Regulations (Minn. R. 7849.0120(D))

234. Minn. R. 7849.0120(D) requires that "the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments."

235. This rule correlates to Minn. Stat. § 216B.243, subd. 3(7), which requires the Commission to consider "the policies, rules, and regulations of other state and federal agencies and local governments."

---

[302] *Id.* at 8.
[303] *Id.* at 14.

236. Applicant states that it will secure all necessary permits and authorizations prior to commencing construction on the portions of the Project requiring such approvals.[304]

237. DOC DER witness Mr. Zajicek agreed that the Commission could conclude that the Applicant does or will comply with the various federal, state, and local requirements, policies, rules, and regulations. However, he deferred to any comments those officials may make formally.[305]

238. NORAD has made a preliminary determination that the wind farm will have an adverse impact to NORAD missions for the Tyler MN Common Air Route Surveillance Radar (CARSR) system if the Wind Farm is constructed as proposed. Plum Creek formally entered into mitigation negotiations with NORAD in December 2020. Plum Creek anticipates that mitigation discussions will take the better part of 2021 to reach resolution. The climate policies and climate-focused political appointees of the new presidential administration are anticipated to improve the speed and availability of current and proposed mitigation options for wind farm developers with projects that fall within the line of sight of a military radar at or near saturation; however, confirmation of the new administration's political appointees will likely not be complete until later this year. Plum Creek anticipates that the agreed-upon mitigation solution will most likely include removal of a relatively small subset of the Project's turbine positions and/or use of the Project's proposed ADLS system as "in-fill" radar to offset any negative visual impacts to the Tyler CARSR line of sight.[306] Applicant believes the matter will be resolved without any change to turbine locations.[307] Applicant is committed to filing updates with the Commission after it resumes discussions with NORAD and after the issue reaches resolution in late 2021 or early 2022.[308]

239. Based on the foregoing, Applicant has satisfied Minn. R. 7849.0120(D).

### E. Conclusion on Minnesota Rule 7849.0120 Criteria

240. The analysis of the Certificate of Need factors represents the greatest area of dispute between the parties. The primary area of dispute is whether Applicant has satisfied the requirement to establish the accuracy of its forecast for demand for the energy the Project would supply.

241. As described above, DOC DER maintains that Applicant has not established its demand forecast through reliable sources of evidence in the manner the Commission has accepted in the past. Applicant counters that it has produced evidence of public policies increasingly in favor of renewable energy generation, demand by utilities intending to increase their renewable energy portfolios, and similarly motivated C&I

[304] *Id.* at 15-18, Tables 8-9 (listing all approvals the Project may need to obtain from governmental entitled to demonstrate full compliance); Ex. 123 at 15-16 (Burmeister Direct).
[305] Ex. 300 at 18 (Zajicek Direct).
[306] Ex. 131 at 2 (Plum Creek Comments on DEIS).
[307] Evid. Hr'g Tr. at 19 (Feb. 17, 2021).
[308] *Id.* at 19-20.

customers. Applicant also maintains that the rule does not explicitly require the type of evidence examined by DOC DER, and it further argues that it is not necessary to show immediate demand, but merely reasonably predicted demand.

242. The Administrative Law Judge notes that, while of undisputed importance, the factor identified in Minn. R. 7849.0120(A)(1), is just one of many factors the Commission must consider in conducting this analysis.

243. As noted above, the Administrative Law Judge finds that Applicant has satisfied the requirements of Minn. R. 7849.0120(A)(1), and that this analysis also supports finding Applicant satisfied Minn. R. 7849.0120(C)(1). The Administrative Law Judge determines that the remaining factors found in Minn. R. 7849.0120(A)-(D) either weigh in favor of granting a Certificate of Need or are not relevant to Applicant or the proposed Project.

### F. Relationship of Proposed Line to Regional Energy Needs (Minn. Stat. § 216B.243, subds. 3(3), (5))

244. Minn. Stat. § 216B.243, subd. 3(3) states that the Commission shall evaluate "the relationship of the proposed facility to overall state energy needs, as described in the most recent state energy policy and conservation report prepared under section 216C.18, or, in the case of a high-voltage transmission line, the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425." Minn. Stat. § 216B.243, subd. 3(5) requires that the Commission consider the benefits of the facility, including its uses to protect or enhance environmental quality.

245. Minnesota is a leader in greenhouse gas emission reduction and other clean energy policies. Adding low-cost, no emission renewable resources such as wind energy has been identified as a means to achieve these environmental quality policies. As the DOC DER stated in its most recent Quadrennial Report:

> Readily available, reliable, clean and competitively priced electricity is critical for the economic vitality, public health, and well-being of all Minnesotans. Because it has no natural deposits of coal, natural gas, or oil products, state policy makers have a long history of supporting local, efficient, and clean electricity to reduce dependence on, and offset economic and environmental effects from, fossil fuel imports.[309]

246. Ensuring that Minnesotans have reliable, reasonably priced, and environmentally sensitive electric service is one of the guiding principles of Minnesota's energy policy and will remain among the Department's top priorities in the coming years.[310]

---

[309] Ex. 127 at 2-3 (Engelking Rebuttal).
[310] *Id.* at 2-3.

247. The Quadrennial Report, while slightly dated now, discusses not only utility efforts to meet RES requirements, but also voluntary green pricing programs, which allow Minnesotans to elect to purchase energy from renewable sources to meet all or a portion of their energy requirements.[311] The Quadrennial Report also describes the greenhouse gas emission reduction goals in Minn. Stat. § 216H.02, and the role renewable energy has and continues to play in driving down the carbon intensity of electricity generated in Minnesota.[312]

248. Under this criterion, adding no-emission wind energy within the state contributes to achieving the greenhouse gas emission reductions and lowering the carbon intensity of the electricity produced and consumed within the state. Utilities and other purchasers of clean energy that have internal goals to help them achieve greater carbon reductions directly contribute to meeting these statutory criteria – and do so above and beyond levels otherwise required by Minnesota's RES requirement. Plum Creek's 414 MW wind farm and accompanying transmission line are estimated to reduce carbon emissions by approximately 1.1 million metric tons per year.[313]

## X. Site Permit Criteria

249. Wind energy projects are governed by Minn. Stat. ch. 216F and Minn. R. ch. 7854 (2019). Minn. Stat. § 216F.01, subd. 2, defines a "large wind energy conversion system" as a combination of wind energy conversion systems with a combined nameplate capacity of five MW or more. Minn. Stat. § 216F.03 requires that a LWECS be sited in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.

250. In addition, when deciding whether to issue a site permit for a LWECS, the Commission considers the factors stated in Minn. Stat. § 216E.03, subd. 7 (2020), which specifies, in relevant part, that the Commission "shall be guided by, but not limited to," the following considerations:

> (1) evaluation and research and investigations relating to the effects on land, water, and air resources or large electric power generating plants and high-voltage T-Lines and the effects of water and air discharges and electric and magnetic field 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;

[311] *Id.*
[312] *Id.*
[313] Ex. 127 at 3 (Engelking Rebuttal).

(2) environmental evaluation of sites . . . 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 . . . 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;

(5) analysis of the direct and indirect economic impact of proposed sites . . . including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site . . . be accepted;

(7) evaluation of alternatives to the applicant's proposed site . . . ;

(8) ***

(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(10) ***

(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site . . . be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities."[314]

251. The Commission must also consider whether the applicant has complied with all applicable procedural requirements.[315]

252. As part of the application process, the Commission's rules require Applicant to provide information regarding any potential impacts of the proposed Project, potential mitigation measures, and any adverse effects that cannot be avoided.[316] No separate environmental review document is required for a LWECS project.[317]

[314] Minn. Stat. § 216E.03, subd. 7. Considerations (8) and (10) are omitted because they pertain only to proposed routes of high voltage transmission lines.
[315] Minn. R. 7854.1000, subp. 3.
[316] Minn. R. 7854.0500, subp. 7 (2019).
[317] *See id.* ("The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts 7849.1000 to 7849.2100, and Minnesota Statutes, chapter

## XI. Application of Site Permit Criteria to the Project

253. DOC EERA determined that "with use of mitigation measures outlined in its site permit application and site permit conditions the Plum Creek Wind Farm is compatible with environmental preservation, sustainable development, and the efficient use of resources."[318]

### A. Demographics

254. The proposed Wind Farm is located in southwestern Minnesota in a rural agricultural region in Cottonwood, Murray, and Redwood Counties.[319] The three counties in the Project Area have very small populations compared to the State of Minnesota as a whole, compromising less than one percent of the state's total population.[320] The population densities within five miles of the Project Area boundary range from 9.6 people per square mile in Shetek Township in Murray County, which is northeast of the Project Area, to 3.6 people per square mile in Holly Township.[321]

255. The total number of housing units in the counties in the Project Area is 5,412 in Cottonwood County, 4,556 in Murray County, and 7,272 in Redwood County (U.S. Census Bureau 2010 data). The average number of persons per household in Cottonwood, Murray, and Redwood Counties is 2.35, which is slightly lower than the state average of 2.4. There are 205 residences within the Project Area.[322] According to DOC EERA, negative impacts to property value due to the development of the Wind Farm are not anticipated.[323]

256. The top three employment industries in the State of Minnesota are education, health, and social services at 25.0 percent, manufacturing at 13.5 percent, and retail trade at 11.1 percent (U.S. Census Bureau, 2017). The top three industries of employment in the counties and townships within the Project Area vary slightly from the state level, with agriculture, forestry, fishing, and hunting, and mining playing a larger role than retail trade in this area of southwestern Minnesota.[324]

257. The Project and its construction will not displace residents or buildings, and is expected to have minimal, temporary to long-term impact on the demographics of the Project Area. There is also no indication that any minority or low-income population is concentrated in any one area of the Project, or that the wind turbines will be placed in an area occupied primarily by any minority population.[325]

---

116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.").

[318] Final EIS at ES 5 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

[319] *Id.* at 75.

[320] Ex. 114 at 27 (SP Application).

[321] Final EIS at 75-76 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

[322] *Id.* at 76; Ex. 114 at 30 (SP Application).

[323] Final EIS at 98 (April 12, 2021) (eDocket No. 20214-172800-01).

[324] *Id.* at 75; Ex. 114 at 27 (SP Application).

[325] Ex. 114 at 30 (SP Application); Final EIS at 76 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

### B. Land Use and Zoning

258. Under Minn. R. ch. 7854, Minn. Stat. chs. 216E, 216F, and specifically pursuant to Minn. Stat. § 216F.07, a site permit issued by the Commission supersedes and preempts all zoning, building or land use rules, regulations or ordinances adopted by regional, county, local and special purpose governments. Therefore, Applicant is not required to apply to county zoning authorities for additional permits or approvals for the Project. However, pursuant to Minn. Stat. § 216F.081, "the Commission, in considering a permit application for LWECS in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the Commission finds good cause not to apply the standards."

259. Cottonwood, Murray, and Redwood Counties are predominately rural with sparsely scattered rural residences, farmsteads, commercial livestock operations, agricultural support facilities, and commercial business throughout. The Project Area was developed to avoid municipalities to the extent possible, though the municipal boundary of Dovray is partially within the Project Area in Murray County.[326]

260. The Comprehensive Plans for Cottonwood, Murray and Redwood Counties serve as land use planning tools with the intent to guide the direction of community figure growth. The plans include an overview of existing county-wide land use, cities, and townships, as well as future land use, demographic analysis, housing trends, economic development, and environmental characteristics of the county.[327]

261. DOC EERA concluded that "the proposed wind farm is consistent and compatible with Cottonwood, Murray, and Redwood counties' respective comprehensive plan goals to conserve farmland and natural resources and support economic and sustainable development."[328]

262. The majority of the Project Area falls within the Agricultural Districts in Cottonwood, Murray, and Redwood Counties, and consistent with the purpose of that zoning district, agricultural use of the Project Area will continue after construction of the Project is complete. Turbines in both layouts are sited in cultivated cropland.[329] Plum Creek will avoid placing turbines within the floodplain, shoreland, and other special protection districts and overlays where siting of LWECS is not permitted by the counties.[330] DOC EERA has confirmed that the "wind farm is compatible with existing land use and zoning."[331]

[326] Ex. 114 at 31 (SP Application).
[327] *Id.* at 32-25.
[328] Final EIS at 73 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[329] Ex. 114 at 35-36 (SP Application).
[330] *Id.* at 35.
[331] Final EIS at 74 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

263. Additionally, the Project is not expected to affect the future land use planning goals of the counties in the Project Area. Renewable energy development is one of the stated future development goals of the counties in the Project Area.[332]

264. Murray County has established a one-mile future development buffer around the town of Dovray to help focus expansion beyond the current municipal boundary and reduce sprawl. This one-mile buffer is identified in the Murray County Future Land Use Planning map and depicted in Figures 5a and 5b Zoning. Murray County also established a Conservation Core Area that runs throughout the county and is intended to protect and conserve valuable natural resources in the county. For the V162 layout, there are approximately 2,280 feet of co-located collection lines and crane paths on participating land within the municipal boundary of Dovray, which are temporary impacts during construction. For the SG170 layout, there are approximately 575 feet of co-located collection lines and crane paths on the same participating parcel within the municipal boundary of Dovray. Additionally, there is one alternate turbine in the V162 layout and two turbines in the SG170 layout within the one-mile buffer of Dovray. There are no turbines in either layout within the Conservation Core Area identified on the Murray County Future Land Use Planning Map.[333]

### C. Conservation Easements

265. There are several parcels of agricultural land in the Project Area that are enrolled in the Conservation Reserve Enhancement Program (CREP).[334]

266. Enrollment in the Conservation Reserve Program (CRP) and CREP is voluntary. Based on publicly available data, there are approximately 1,689 acres (approximately two percent) of the Project Area in Cottonwood and Murray Counties currently enrolled in CREP and Reinvest in Minnesota (RIM) easements. There are no CREP or RIM easements mapped in the Redwood County portion of the Project Area.[335]

267. The U.S. Fish and Wildlife Services (USFWS) holds easements in the Project Area for three Farm Service Agency (FSA) parcels and an easement for an access road to a National Wildlife Refuge (NWR) parcel, all of which total 35 acres (less than 0.1 percent) of the Project Area in Murray and Cottonwood Counties (Figures 12a and 12b). There are no USFWS wetland or grassland easements in the Project Area.[336]

268. The Plum Creek Project design for both the V162 and SG170 layouts avoids impacts to NWR, FSA, CREP, and RIM conservation easements.[337]

---

[332] Ex. 114 at 33 (SP Application).
[333] *Id.* at 34.
[334] *Id.* at 36; Final EIS at 20 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[335] Ex. 114 at 36-37 (SP Application); Final EIS at 197 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[336] Ex. 114 at 36-37 (SP Application); Final EIS at 197 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[337] Ex. 114 at 36-37 (SP Application); Final EIS at 197 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

## D. Noise

269. Large electric generation facilities produce sound. Sound has multiple characteristics which determine whether a sound is too loud or otherwise inappropriate. Sound travels in a wave motion and produces a sound pressure level. This sound pressure level is commonly measured in decibels (dB). Sounds also consists of frequencies as in the high frequency (or pitch) of a whistle. Most sounds are not a single frequency but a mixture of frequencies. Finally, sounds can be constant or intermittent. The perceived loudness of a sound depends on all of these characteristics.[338]

270. Sound level is measured in units of dB on a logarithmic scale. It may be made up of a variety of sounds of different magnitudes, across the entire frequency spectrum. The human ear is not equally sensitive to sound at all frequencies and magnitudes. Some frequencies, despite being the same dB level (that is, magnitude), seem louder than others. For example, a 500 hertz (Hz) tone at 80 dB will sound louder than a 63 Hz tone at the same level. In addition, the relative loudness of these tones will change with magnitude. For example, the perceived difference in loudness between those two tones is less when both are at 110 dB than when they are at 40 dB.[339]

271. To account for the difference in the perceived loudness of a sound by frequency and magnitude, acousticians apply frequency weightings to sound levels. The most common weighting scale used in environmental noise analysis is the "A-weighting," which represents the sensitivity of the human ear at low to moderate sound pressure levels. The A-weighting is the most appropriate weighting when overall sound pressure levels are relatively low (up to about 70 dB(A)). The A-weighting de-emphasizes sounds at lower and very high frequencies, since the human ear is less sensitive to sound at these frequencies at low magnitude.[340]

272. The A-weighting is the most appropriate weighting for wind turbine sound for two reasons. The first is that sound pressure levels due to wind turbine sound are typically in the appropriate range for the A-weighting at typical receiver distances (50 dB(A) or less). The second is that various studies of wind turbine acoustics have shown that the potential effects of wind turbine noise on people are correlated with A-weighted sound level, as well as to the perceived loudness of wind turbine sound.[341]

273. Under Minn. Stat. § 116.07, subd. 2, noise standards promulgated by the MPCA are designed to ensure public health and minimize citizen exposure to inappropriate sounds. The MPCA's Noise Standards are found in Minn. R. ch. 7030. The MPCA standards require A-weighted noise measurements. Different standards are specified for daytime (7:00 AM – 10:00 PM) and nighttime (10:00 PM – 7:00 AM) hours. The noise standards specify the maximum allowable sound levels that may not be exceeded for more than 10 percent of an hour (L10) and 50 percent of an hour (L50),

[338] Final EIS at 90 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[339] Ex. 114 at 37 (SP Application).
[340] *Id.* at 38; Final EIS at 90-91 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[341] Ex. 114 at 38 (SP Application).

respectively. Household units, including farmhouses, are included in Land Use Noise Area Classification (NAC) 1.[342]

274. In a residential setting, for example, noise restrictions are more stringent than in an industrial setting. Rural residential homes are considered NAC 1 (residential), while agricultural land and agricultural activities are classified as NAC 3 (industrial). The rules also distinguish between nighttime and daytime noise; less noise is permitted at night. Sound levels are not to be exceeded for 10 percent and 50 percent of the time in a one-hour survey (L10 and L50) for each noise area classification.[343] The following table lists Minnesota's Noise Standards by area classification:[344]

**Table 8.4-2**
**MPCA State Noise Standards – Hourly A-Weighted Decibels**

| Land Use | Code | Day (7:00am – 10:00pm) dB(A) | | Night (10:00pm – 7:00am) dB(A) | |
|---|---|---|---|---|---|
| | | $L_{10}$ | $L_{50}$ | $L_{10}$ | $L_{50}$ |
| Residential | NAC-1 | 65 | 60 | 55 | 50 |
| Commercial | NAC-2 | 70 | 65 | 70 | 65 |
| Industrial | NAC-3 | 80 | 75 | 80 | 75 |

275. The site is located in a predominately rural agricultural landscape. The ground cover is primarily farmland and open fields, with residential dwellings interspersed throughout the area. Typical agricultural noise sources include farm machinery, agricultural vehicle operations, recreational activities (such as hunting and all-terrain vehicles), motor vehicle traffic, and road construction activities.[345] All receivers evaluated in the Noise Assessment were considered NAC-1.[346]

276. Applicant conducted a preliminary noise assessment of the proposed Project, using Modeling for the Project in accordance with the standard ISO 9613-2, "Acoustics -Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation" and Cadna-A software, both of which are widely accepted.[347] The modeling anticipated sound levels that will be experienced at noise-sensitive receptors throughout the Project Area.[348]

277. Applicant selected five onsite and two offsite monitoring locations. Background sound level monitoring was conducted from August 27, 2019 to September 5, 2019 throughout the Project Area to quantify the existing sound levels, including the nighttime L50, and to identify existing sources of sound. Monitoring locations, including two "worst case" locations, were selected per the guidance provided in the Department of Commerce's "Guidance for Large Wind Energy Conversion System

[342] Ex. 121 at 3 (Duncan Direct).
[343] Ex. 114 at 39 (SP Application).
[344] *Id.*
[345] Final EIS at 93 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[346] Ex 121 at 3 (Duncan Direct).
[347] *Id.* at 4-5; Final EIS at 93 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[348] Final EIS at 93 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

Noise Study Protocol and Report," July 2019. The data collection and post-collection data processing methodologies are detailed in the Application.[349]

278. Sound power level data provided by the manufacturer for each of the potential turbines included in the assessment (SG170 and V162) was then used as input into the model. The sound power level for each turbine varies with wind speed, so the maximum rated sound power level for each turbine model was used in the assessment with the addition of a 2 dB uncertainty factor typical of manufacturer specifications. The model also included sound emissions from the two substation transformers. Based on the other inputs described above that define the propagation path, a projected sound pressure level was then calculated for each receiver or residence throughout the Project Area based on two model runs, to assess for potential different turbine models.[350]

279. Applicant reports that maximum calculated sound levels at all residential receptors from the two turbine models are below the nighttime L50 noise limit of 50 dB(A). The maximum calculated wind farm-only sound level at a non-participant's residence is 41 dB(A). Accounting for the measured pre-construction nighttime L50 of 42 dB(A) results in total calculated sound level (background plus turbine) of 45 dB(A) at the worst-case non-participating residence. The maximum calculated wind farm-only sound level at a participating residence is 47 dB(A). Average Project-related sound levels at residences for all turbine models range from 28 to 30 dB(A), on an hourly L50 basis. The maximum total calculated sound level, based on assumptions incorporated into the Cadna-A model, the turbine layouts, and the maximum measured pre-construction nighttime L50, results in a 48 dB(A) L50 at the nearest noise-sensitive receptor, a participant's residence.

280. Plum Creek has incorporated into the Project design a minimum 1,000 feet distance from residences and the distance required to comply with the MPCA limit of a 50 dB(A) nighttime L50 noise level. As a result, the closest turbine to a non-participant residence in the V162 layout is 2,496 feet and in the SG170 layout is 2,124 feet. The closest turbine to a participating residence in the V162 layout is 1,046 feet and in the SG170s layout is 1,246 feet.[351]

281. Applicant's layouts ensure cumulative impacts from all wind turbines, and maximum calculated noise levels for all turbine models are below the MPCA's nighttime L50 noise limit of 50 dB(A) at residential receptors.[352] DOC EERA confirmed that modeling showed that turbine-only noise is below the MPCA threshold for both non-participating and participating residences.[353]

282. The record demonstrates that Applicant has minimized impacts from noise. In addition, the Draft Site Permit contains adequate conditions to monitor and mitigate the sound from the Project. For example, Draft Site Permit Condition 4.3 requires turbines to be placed in appropriate locations to ensure compliance with the Noise Standards.

[349] Ex. 121 at 3 (Duncan Direct).
[350] *Id.* at 3-5.
[351] Ex. 114 at 40 (SP Application); Final EIS at 95-96 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[352] Final EIS at 93 (Apr. 12, 2021) (eDocket No. 20214-172800-01); Ex. 121 at 5-6 (Duncan Direct).
[353] Final EIS at 94 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

Section 7.4 of the Draft Site Permit requires Applicant to conduct post-construction noise monitoring. The study will determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds.[354]

### E. Aesthetic Impacts

283. Large energy projects can pose an impact aesthetically, or on visual resources. Aesthetic, or visual resources, are generally defined as the natural and built features of a landscape that may be viewed by the public and contribute to the visual quality and character of an area. Aesthetic resources form the overall impression that an observer has of an area or its landscape character. Distinctive landforms, water bodies, vegetation, and human-made features that contribute to an area's aesthetic qualities are elements that contribute to an area's visual character. Visual quality is generally defined as the visual significance or appeal of a landscape based on cultural values and the landscape's intrinsic physical elements.[355]

284. The topography of the Project Area is glaciated, gently rolling plains with elevations ranging from 1,086 to 1,614 feet above sea level. Elevations increase in a northeast to southwest direction; the highest elevations are in the southwest corner of the Project Area. Agricultural fields, farmsteads, and gently rolling topography visually dominate the Project Area. The landscape can be classified as rural open space.[356]

285. Viewsheds in this area are generally broad and uninterrupted, with only small scattered areas where they are defined by trees or topography. The settlements in the vicinity are residences and farm buildings scattered along rural county roads. The area is also shaped by a built environment. Horizontal elements, such as highways and county roads, are consistent with the long and open viewsheds in the area. Vertical elements such as T-Lines and wind turbines are visible from considerable distances and are the tallest and often the most dominant visual feature on the landscape. The Jeffers Wind Energy Center, located approximately five miles south of the Project Area, consists of 20 turbines that are visible to residences within the Project Area.[357]

#### 1. Visual Impacts on Public Resources

286. The Project will be located within the viewshed of MDNR-managed WMAs, Lake Shetek State Park, USFWS Waterfowl Production Areas (WPAs), USFWS NWR lands, or other natural areas and may be visible by people using those areas.[358]

287. The degree of the visual and unavoidable impact on public resources will vary based upon the distance from the Project, obstructions such as trees between the public resource and the Project, a viewer's orientation to the Project (i.e., facing towards or away), and the viewer's personal preferences. As an example, a person utilizing the

[354] Ex. 128 (Draft Site Permit); Ex. 114 at 3, 18 (SP Application).
[355] Final EIS at 82 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[356] Ex. 114 at 42 (SP Application); Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[357] Ex. 114 at 42 (SP Application); Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[358] Ex. 114 at 43 (SP Application); Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

state trail at Lake Shetek State Park may see the wind turbines in open areas of the trail, but not in areas with trees immediately adjacent to the trail or when the trail travels away from the Project.[359]

288. All turbines will be set back from public lands based on a minimum of the 3 RD by 5 RD setbacks from all non-leased properties per the Commission siting guidelines. To the extent public resources are utilized at night, turbine lighting may be visible.[360]

### 2. Visual Impacts on Private Lands and Homes

289. Residences with turbines and associated infrastructure closest to their homes are those that are participating in the Project by signing easements. The closest turbine to a participating residence in the Vestas V162 layout is 1,046 feet and in the SG170 layout is 1,246 feet. The closest turbine to a non-participant residence in the Vestas V162 layout is 2,496 feet and in the SG170 layout is 2,124 feet.[361] While people living in or traveling through the area are accustomed to viewing wind turbines, the Project will add to the cumulative visual impacts by adding up to 74 new turbines in the area.[362]

290. The collector substations will also be visible to those residents that live within one mile of these facilities. The collector substations will be lower profile than the wind turbines. Access roads have been designed to provide direct access from the public road to the turbine and minimize impacts to the agricultural fields. Where possible, the access roads follow field edges. To the extent possible, Plum Creek has co-located linear facilities (access roads, crane paths, and collection lines) to minimize visual impacts. Post-construction, Plum Creek anticipates minimal visual impacts from temporary facilities (crane paths, collection lines, and workspace associated with wider access roads and turbines) because all turbines in both layouts and most associated facilities are sited in cropland and will continue to be cropped during operation.[363]

291. The record demonstrates that Applicant has taken steps to avoid and minimize aesthetic impacts. With the mitigation measures discussed above, the Project is not anticipated to result in significant aesthetic impacts.[364]

292. Additionally, Applicant will coordinate with the Federal Aviation Administration (FAA) on potential implementation of an ADLS radar. With this radar system, turbine lighting (synchronized flashing red lights) is off until the radar detects an aircraft within a prescribed distance to the Project, at which time, the blinking red lights turn on. After the aircraft is safely beyond the Project, the blinking lights are again turned off. Implementation of this radar system will depend on FAA review and approval.[365]

---

[359] Ex. 114 at 43 (SP Application); Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[360] Ex. 114 at 43 (SP Application); Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[361] Ex. 114 at 44 (SP Application).
[362] *Id.* at 43; Final EIS at 84 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[363] Ex. 114 at 44 (SP Application).
[364] *Id.* at 44-45; Final EIS at 163 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[365] Ex. 114 at 45 (SP Application).

## F. Shadow Flicker

293. Like any tall structure, wind turbines cast a shadow when the sun is visible. When the wind turbine blades rotate and pass in front of the sun, a flickering or flashing effect may occur when the shadows of the rotating blades cause alternating changes in light intensity at a given stationary location, a receptor, such as the window of a home. This recurring change in light intensity is known as shadow flicker.[366]

294. Shadow flicker occurs under very specific conditions. For example, shadow flicker can only occur when the sun is shining and the turbine is in operation (i.e., when the turbine blades are rotating). Moreover, shadow flicker is generally most notable when a turbine is facing a receptor, as this results in the widest-possible shadow being cast. Shadow flicker intensity and frequency at a given receptor are determined by several interacting factors, such as sun position, wind speed and direction, turbine and receptor locations, time of day, turbine operating state, and other similar factors. The intensity of shadow flicker varies significantly with distance, and as separation between a turbine and receptor increases, shadow flicker intensity will generally diminish by a corresponding amount as shadows diffuse and become imperceptible.[367]

295. Minnesota does not have a specific rule or regulatory standard defining the amount of shadow flicker acceptable for a commercial wind project.[368]

296. Applicant conducted modeling and analysis of the potential annual frequency of shadow flicker associated with the operation of the Wind Farm turbines at existing non-participating and participating residences.[369] Applicant used WindPRO, an industry-leading software package for the design and planning of wind energy projects, to predict the expected amount of shadow flicker with respect to every wind turbine location.[370] The Applicant's report delineates its modeling procedures and conservative assumptions. Applicant's modeling is likely to overestimate predicted shadow flicker by assuming turbines operate 100 percent of the time, and not considering obstacles such as trees and buildings.[371]

297. Based on Applicant's modeling, the maximum value of shadow flicker for the two turbine layouts was found to be 28.5 hour/year for non-participating receptors. The maximum value for any of the receptors was found to be 119.9 hours/year. A total of 461 residences and two layout options were evaluated.[372]

298. Applicant is not proposing any specific mitigation at this time.[373] If a residence experiences inordinately more flicker than anticipated by modeling during

[366] Ex. 117 at 3 (Nuckols Direct).
[367] *Id.*; Ex. 114 at 45 (SP Application); Final EIS at 85 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[368] Final EIS at 85 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[369] Ex 117 at 3 (Nuckols Direct); Ex. 114 at 45-48 (SP Application).
[370] Ex. 117 at 4 (Nuckols Direct).
[371] *Id.*; Ex. 114 at 48 (SP Application).
[372] Ex. 114 at 48 (SP Application); Ex. 117 at 4-5 (Nuckols Direct); Final EIS at 86 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[373] Ex. 114 at 49 (SP Application).

operation, mitigation would be addressed at that time. Potential mitigation measures include, but are not limited to, installation of exterior or interior screening and installation of vegetation, such as trees or bushes, among other options.[374] However, because of the conservative methods used for the modeling, Applicant does not anticipate that more flicker than modeled will occur.[375]

299. Further, the Draft Site Permit appropriately addresses shadow flicker. Section 7.2 of the Draft Site Permit requires the Applicant to provide the Commission with data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the Project boundary potentially subject to turbine shadow flicker exposure. The data will include the modeling results, assumptions made, and the anticipated level of exposure from turbine shadow flicker for each residence. The Applicant will also be required to provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure.[376]

### G. Public Service and Infrastructure

300. LWECS projects have the potential to impact public services during both construction and operation. The Project is located in a sparsely populated, predominantly rural and agricultural area in south-central Minnesota. Public services within the Project Area include emergency services, utilities, roads and railroads, communication systems, television service, and cell towers and broadband service. The SP Application addresses whether the Project has the potential to affect these public services.[377]

301. **Emergency Services.** Construction and operation of the Project is not expected to impact the availability of emergency services. Plum Creek will coordinate with emergency services providers to determine appropriate safety precautions and standards and develop measures to address these precautions and standards.[378]

302. **Utility Infrastructure.** The Project is sited to avoid impacts to existing utility infrastructure. All Project turbines are sited at least 1.1x the turbine height from any existing utility infrastructure. Other utilities that are common along roads and to residences, such as rural water lines and distribution lines, will be surveyed prior to construction as part of the ALTA survey.[379]

303. **Roads.** An established network of county and township roads exists in the Project Area. Various county and township roads provide access to the Project Area. Construction activities will increase the amount of traffic using local roadways, and may temporarily affect traffic numbers in the area, but such use is not anticipated to result in adverse traffic impacts. During construction, temporary impacts are anticipated on some public roads, including potential lane closures and volume. Delivery of construction

[374] *Id.*; Ex. 117 at 4-5 (Nuckols Direct); Final EIS at 88 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[375] Ex. 114 at 49 (SP Application).
[376] Ex. 128 at 17 (Draft Site Permit)
[377] Ex. 114 at 49 (SP Application).
[378] *Id.* at 50.
[379] *Id.* at 51.

equipment may require roadways to be upgraded or repaired post-delivery.[380] Applicant is coordinating with all counties and townships within the Project Area to develop a cooperative Development, Road Use, and Drainage Agreement.[381] Both Murray and Redwood Counties have indicated the importance of such agreements to their governing bodies.[382]

304. **Railroads.** No railroads are located within the Project Area and, therefore, the Project will not affect any railroads.[383]

305. **Communications Systems.** Because of their height, wind turbines have the potential to interfere with existing communications systems licensed to operate in the United States. Wind turbines can cause interference with electronic communications by obstructing the reception of communication signals. Wind turbines do not impact digital signals (digital television, internet, cell phones), unless the turbines directly obstruct the signal, such as being located in the line-of-sight. Analog signals (e.g., amplitude Modulated (AM) and frequency modulated (FM) radio, microwaves) can be interfered with by direct obstruction and by indirect signal interference, resulting in ghosting of television pictures or signal fading.

306. Applicant commissioned a communication tower study, which identified three communication tower structures and twelve communication antennas in the Project Area. DOC EERA confirmed the Applicant's determination that there are no impacts, or sufficient mitigation, as to the following:

- AM and FM radio;
- Microwave beam paths;
- Telephone service;
- GPS; and
- Wireless broadband internet.[384]

307. Many federal departments and agencies operate communications systems that are not part of a public database, including radar. Modern radars differentiate between stationary and moving objects using a phenomenon called "Doppler shift." When wind turbines are in the radar line of sight, the radar detects the Doppler shift of the rotating turbine blades and this interferes with the radar system.[385]

308. Proposed wind farms within the line-of-sight of a NORAD radar require a developer to engage in Mitigation Response Team (MRT) discussions with the Air Force and NORAD. On October 27, 2020, the Department of Defense (DoD) Military Aviation and Installation Assurance Siting Clearinghouse informed Plum Creek that the DoD

[380] *Id.* at 51-53; Final EIS at 103 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[381] Ex. 114 at 52-53 (SP Application); 1 p.m. Public. Hr'g Tr. at 28-29 (Feb. 16, 2021).
[382] Public Comment by Brozek (eDocket No. 20213-171589-01); 1 p.m. Public Hr'g Tr. 1 at 27-28 (Feb. 16, 2021) (Christoffels).
[383] Ex. 114 at 52 (SP Application).
[384] Final EIS at 111-16 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[385] *Id.* at 112-13.

believes the wind farm may have an adverse impact to NORAD missions for the Tyler, Minnesota CARSR system, if constructed as proposed.[386]

309. Plum Creek formally entered into mitigation negotiations with NORAD in December 2020. Plum Creek is exploring some technological solutions that would mitigate the issue, including potential upgrades to the radar facility and dual usage of Aircraft Detection Lighting System radars, along with other longer term options.[387] Plum Creek anticipates that the agreed-upon mitigation solution will most likely include removal of a relatively small subset of the Project's turbine positions and/or use of the Project's proposed ADLS system as "in-fill" radar to offset any negative visual impacts to the Tyler CARSR line of sight.[388] Applicant believes the matter will be resolved without any change to terminal locations.[389] Applicant committed to filing updates with the Commission after it resumes discussions with NORAD and after the issue reaches resolution in late 2021 or early 2022.[390]

310. There is a possibility that broadcast facilities (HDTV and digital television) would be impacted by the wind farm. Outdoor antennas pointed through the turbine area, "rabbit ear" antennas, or older HDTV receivers would be more likely to experience signal disruption. Interference would be more likely to occur if there is a direct interference with digital broadcast paths of local television stations. Occasionally, multipath interference from one or more turbines can cause video failure in HDTV receivers, especially if the receiver location is in a valley or other place of low elevation. Television reception at residences relying on cable or satellite television service will not be impacted by construction or operation of the Project.[391]

311. Applicant has committed to address any post-construction disruptions in television broadcast signals on a case-by-case basis. Mitigation measures may include installation of antenna or equipment to boost signal, among other options set forth by Applicant.[392]

312. The Draft Site Permit also contains provisions to prevent the Project's interference with television and radio signal reception, microwave signal patterns, and telecommunications, and requires Applicant to be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.[393]

---

[386] *Id.*
[387] Evid. Hr'g Tr. at 18 (Feb. 17, 2021).
[388] Ex. 131 at 2 (Plum Creek Comments on DEIS).
[389] Evid. Hr'g Tr. at 21 (Feb. 17, 2021).
[390] *Id.* at 20.
[391] Ex. 114 at 55 (SP Application); Final EIS at 114-15 (Apr. 12, 2021) (eDocket No. 20214-172800-01). Applicant identified 2018 off-air television stations within 150 kilometers of the Project Area. Of these 218 stations, only 151 are currently licensed and operating. Of those, 131 are lower-power stations or translators.
[392] Ex. 114 at 56 (SP Application).
[393] Ex. 128 at 12 (Draft Site Permit).

## H. Cultural and Archaeological Resources

313. Cultural resources include archaeological and historic architectural resources that provide important information about the history of human occupation and alteration of the landscape over time. Archaeological resources include prehistoric and historic artifacts, structural ruins, or earthworks that are typically found either partially or completely below the ground surface. Historic architectural resources include standing structures, such as buildings and bridges, as well as historic districts and landscapes.[394]

314. The Project Area is located within the Prairie Lakes Archaeological Region (Region 2), which covers most of southwestern and south-central Minnesota. It includes all of Big Stone, Blue Earth, Brown, Carver, Chippewa, Cottonwood, Faribault, Freeborn, Jackson, Lac Qui Parle, Le Sueur, Lyon, McLeod, Martin, Murray, Nicollet, Redwood, Renville, Scott, Sibley, Stevens, Swift, Watonwan, and Yellow Medicine counties and portions of Douglas, Grant, Kandiyohi, Lincoln, Meeker, Nobles, Otter Tail, Pipestone, Pope, Rice, Steele, Traverse, and Waseca counties. The region extends into northeastern South Dakota and north-central Iowa.[395]

315. One previously recorded archaeological site was identified within the Project Area boundary. Site 21MUh marks the purported location of a historic ghost town known as Ben Franklin; this site location has never been verified and it is not listed in the National Register of Historic Places (NRHP).[396]

316. Plum Creek's background literature review identified 15 previously recorded archaeological sites within one mile of the Project Area. Of these 15 sites, 10 are prehistoric sites of undetermined age and consist of either isolated finds or diffuse artifact scatters; three are artifact scatters that can be attributed to the Woodland tradition; and the two remaining sites are the historic remains of a dugout home (Charlie Zierkey's Dug Out/Dutch Charlie's) and the ruins of a railroad station (Walnut Grove Whistle Stop). None of the previously recorded archaeological sites within one mile of the Project Area were evaluated for listing in the NRHP.

317. A total of six previously recorded historic architectural resources were identified within the Project Area. These historic architectural resources are the St. Olaf Lutheran Church, District School No. 43, the Anderson Dodecagonal Barn, Bridge No. L6568, a school, and the Holly Township Hall. None of these historic architectural resources is listed in the NRHP.

318. A total of 24 previously recorded historic architectural resources were identified within one mile of the Project Area. These resources consist of four agricultural processing, five commercial, three domestic, two educational, two government, one recreational, five religious, and two transportation-related properties (refer to Appendix E for additional details). Most of these resources are concentrated in and near the small towns of Dovray, Walnut Grove, and Revere, outside of the Project boundary. Of the 24

[394] Ex. 114 at 57 (SP Application); Final EIS at 205 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[395] Ex. 114 at 58 (SP Application).
[396] *Id.* at 59.

previously recorded historic architectural resources within one mile of the Project Area, two are listed in the NRHP. The Walnut Grove Creamery Association stands in downtown Walnut Grove, approximately 2,500 feet northwest of the Project Area. The creamery was listed in the NRHP in 2006. The Revere Fire Hall is located approximately 4,500 feet north of the Project Area in the town of Revere and was listed in the NRHP in 1980.

319. Plum Creek has designed the Project to avoid any impacts to all previously documented archaeological or historic architectural resources either by Project alteration or structure placement. As such, no impacts to previously documented archaeological or historic architectural resources would occur as a result of the Project.[397]

320. In 2020, Applicant conducted field surveys in high-potential areas that would contain previously unrecorded cultural resources that meets the standards for the State Historic Preservation Office (SHPO) Manual for Archaeological Projects in Minnesota. If field surveys identify archaeological or historic architectural resources are identified as a result of field surveys, Plum Creek will work with the SPHO to identify measures to avoid or mitigate any effects to these resources.[398]

321. Additionally, in February 2021, SHPO recommended that Plum Creek complete a Phase Ia archaeological assessment due to the nature and location of the Project. If this assessment determines that a Phase I archaeological survey is needed, SHPO recommended that such a survey be required. According to SHPO, the Phase I survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified.[399]

322. The Draft Site Permit addresses archeological and historical resources. Section 5.3.16 of the Draft Site Permit requires Plum Creek to make every effort to avoid impacts to identified archaeological and historic resources. If a resource is encountered, Plum Creek shall contact and consult with SHPO and the Office of the State Archeologist (OSA). Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Project impacts consistent with SHPO and OSA requirements. In addition, before construction, workers will be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties are found. If human remains are found during construction, Plum Creek must immediately halt construction at such location and promptly notify local law enforcement and OSA. Construction at such location shall not proceed until authorized by local law enforcement or OSA.[400]

---

[397] *Id.* at 60.
[398] *Id.*; Ex. 124 at 4 (Anderson Direct).
[399] Written Comments Received on DEIS and Draft Site Permit at 13 (Feb. 22, 2021) (eDocket No. 20212-171205-03).
[400] Ex. 128 at 12 (Draft Site Permit).

## I. Recreation

323. Recreational opportunities near the Project Area include hiking, biking, boating, fishing, camping, swimming, snowmobiling, hunting, golfing, and nature viewing. Applicant has identified the locations of Aquatic Management Areas (AMAs), WMAs, Scientific and Natural Areas (SNAs), WPAs, National Wildlife Refuges (NWRs), and state parks; golf courses; and snowmobile, water, and state trails within 10 miles of the Project Area.[401]

324. Construction and operation of the Project is not expected to affect public access to or enjoyment of nearby recreational opportunities. Impacts to recreation would mostly be related to Project construction, which will be minimal, temporary, and isolated to specific areas throughout the Project Area.[402]

325. No AMAs, WMAs, or SNAs are present within the Project Area. There are six AMAs within 10 miles of the Project Area, a number of WMAs are located within 10 miles of the Project Area, and three SNAs are located within 10 miles of the Project Area.[403]

326. The USFWS manages one 60-acre NWR parcel called Pell Creek associated with the Northern Tallgrass Prairie NWR in the northeastern Murray County portion of the Project Area. The NWR provides habitat for a number of grassland dependent species. The Northern Tallgrass Prairie NWR encompasses all or part of 85 counties in western Minnesota and northwestern Iowa and includes nearly 3,000 acres of land owned by the refuge system and an additional 2,500 acres protected in conservation easements. There are no other NWRs within 10 miles of the Project boundary.[404]

327. Lake Shetek State Park, located approximately 3.5 miles west of the Project Area, offers camping, fishing, hiking, and bike-trail opportunities, and also features a historic monument and nature center. There are no other state parks within 10 miles of the Project Area.[405]

328. The MDNR offers a Walk-In Access (WIA) Program for public hunting on private land. There are three WIA parcels within the Project Area covering 287.6 acres.[406]

329. There are no state trails or water trails within the Project Area. The closest state trail is associated with Lake Shetek State Park, which is located approximately 3.5 miles west of the Project Area and is discussed further above; and the closest water trail, a segment of the Cottonwood River, is located approximately 4.2 miles east of the Project boundary.[407]

---

[401] Ex. 114 at 61-64 (SP Application) at 61-64.
[402] *Id.* at 65.
[403] *Id.* at 61-64.
[404] *Id.* at 64.
[405] *Id.*
[406] *Id.*
[407] *Id.*

330. A section of the Cottonwood and Jackson County Snowmobile Trail bisects the Project running north along County Road 54 for approximately 2.2 miles and then turning east along 100th Street for approximately 2 miles.

331. Finally, the Rolling Hills Golf Course is immediately adjacent to the southern Project Boundary, west of Westbrook in Murray County.

332. While there are several recreation lands within 10 miles of the Project Area, only one NWR parcel and a snowmobile trail are within the Project Area. Plum Creek has sited turbines at least 3 RD x 5 RD from the NWR recreation area and routed collection lines and crane paths around this parcel. A co-located collection line and crane path cross the Cottonwood and Jackson County Snowmobile Trail. This would result in a minimal, temporary impact to the trail but no permanent impacts to the trail would occur. As this recreational trail is only used during winter months, potential impacts will depend on the timing of construction. If construction in this area is completed during nonwinter months, snowmobilers would not notice an impact. The collection line will be buried and, as such, no impacts to the snowmobile trail will occur from operation of the Project.[408]

333. During operations, any impacts are expected to be visual in nature and will be mitigated by the Applicant.[409]

### J. Public Health and Safety

334. Construction and operation of large energy facilities may have the potential to impact human health and safety.[410]

335. Electromagnetic fields (EMF) are often raised as a concern with electric transmission facilities.[411] EMF refers to electric and magnetic fields that are present around any electrical device.[412] Naturally occurring EMF are caused by the earth's weather and geomagnetic field. Man-made EMF are caused by any electrical device and found wherever people use electricity.[413] The Commission has consistently found that there is insufficient evidence to demonstrate a causal relationship between EMF exposure and human health effects.[414]

336. The source of EMF for the Wind Project will be from electrical collection lines and wind turbines. EMF from electrical collection lines, T-Lines, and transformers dissipate rapidly with distance from the source. Generally speaking, higher-voltage electrical lines produce higher levels of EMF at the source before dissipating with distance. There is no federal standard for T-Line electric fields. The Commission, however, has imposed a maximum electric field limit of 8 kV per meter (kV/m) measured

[408] *Id.* at 65.
[409] *Id.*
[410] *Id.*; Final EIS at 98 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[411] Ex. 114 at 65 (SP Application); Final EIS at 98 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[412] Ex. 114 at 66 (SP Application).
[413] Final EIS at 98 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[414] *Id.*; *see also* Ex. 114 at 67 (SP Application).

at one meter (3.28 feet) above the ground. There are presently no Minnesota regulations pertaining to magnetic field exposure.[415]

337. Levels of EMF from the Project will be considerably below accepted guidelines. EMF from underground electrical collection lines dissipates very close to the lines because they are installed below ground within insulated shielding. The electrical fields are negligible, and there is a small magnetic field directly above the lines that, based on engineering analysis, dissipates within 20 feet on either side of the installed cable. The closest collection line to a residence is at least 160 feet, well beyond the distance where magnetic fields dissipate to background levels. Similarly, EMF associated with the transformers at the base of each turbine completely dissipates within 500 feet, so the 1,000-foot turbine setback from residences will avoid any EMF exposure to homes.[416]

338. There is one dairy operation in the Project Area. Plum Creek has sited turbines in both layouts nearly one mile from this operation. Similarly, collection lines, at their closest (V162 layout) are over a half-mile from this dairy farm. These distances are adequate such that there will be no stray voltage impacts to this dairy operation.[417]

339. LWECS can introduce air space hazards for aircraft traveling to and from local airports; there is a six-mile buffer from public use airports for which turbines cannot be sited.[418]

340. There are two public airports and two private airports/heliports within 10 miles of the Project Area. The nearest airport is the Sanford Westbrook Clinic Heliport, located approximately 1.3 miles south of the Project. These airports have runway approaches and restricted airspace for aircraft to approach and take off from.[419] Air traffic may also be present near the Project Area for crop dusting of agricultural fields.[420]

341. The closest public airport to the proposed Project is the Tracy Municipal airport, located approximately 6.4 miles from the Project Area and outside the six-mile buffer from public use airports. Turbines have been sited to avoid any impacts to restricted airspace.[421]

342. The installation of wind turbine towers in active croplands will create a potential for collisions with crop-dusting aircraft. However, the turbines would be visible from a distance. Plum Creek will notify local airports about the Project, including the location of new towers in the area to minimize impacts and reduce potential risks to crop dusters.[422]

---

[415] Ex. 114 at 66 (SP Application).
[416] *Id.* at 66-67; Final EIS at 99 (Apr. 12, 2021) (eDocket No. 20214-172800-01). Note that the Final EIS appears to contain a typographical error, as it indicates that EMF dissipates within five feet.
[417] Ex. 114 at 68 (SP Application); Final EIS at 101 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[418] Ex. 114 at 65 (SP Application).
[419] *Id.* at 68.
[420] *Id.* at 69.
[421] *Id.*
[422] *Id.*

343. Applicant will coordinate with the FAA, local airports, and state air traffic agencies to ensure public safety is not negatively impacted by the Project. FAA approval is a "Determination of No Hazard." Applicant will also follow all FAA guidelines to appropriately mark and light the Project. Further, permanent meteorological towers will be freestanding with no guy wires.[423]

344. The Draft Site Permit contains conditions to address public safety. In accordance with the conditions provided in Section 5.3.26, Applicant will provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the Project and any restrictions or dangers associated with the Project. Applicant will also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. In addition, Applicant will submit the location of all underground facilities to Gopher State One Call after construction is completed.[424]

### K. Hazardous Materials

345. LWECS projects have the potential to affect known contaminated sites if construction of the Project facilities causes ground disturbance within these sites. In addition, LWECS project construction and operation may utilize petroleum products and other products that could result in site contamination if these materials are not managed and disposed of in compliance with the requirements of applicable laws and regulations.[425]

346. Potential hazardous materials within the Project Area are associated with agricultural activities, and include petroleum products (fuel and lubricants), pesticides, and herbicides. Older farmsteads may also have lead-based paint, asbestos shingles, and polychlorinated biphenyls in transformers. Trash and farm equipment dumps are common in rural settings.[426]

347. Plum Creek reviewed the U.S. Environmental Protection Agency's (EPA) Facility Registry Service (FRS) to identify sites that are listed on the Comprehensive Environmental Response, Compensation, and Liability Information System (also known as Superfund sites); Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal; RCRA hazardous waste generators; the Assessment, Cleanup, and Redevelopment Exchange System; Minnesota Permitting, Compliance, and Enforcement Information Management System; and the Leaking Underground Storage Tank American Recovery and Reinvestment Act database. Plum Creek also reviewed the MPCA's *What's in my Neighborhood* (WIMN) database to identify any potential contaminated sites in the Project Area.[427]

---

[423] *Id.*
[424] Ex. 128 at 14 (Draft Site Permit).
[425] Ex. 114 at 69 (SP Application).
[426] *Id.*
[427] *Id.* at 70.

348. Construction of the Project will not impact known contaminated sites. Plum Creek has designed the Project to avoid known contaminated sites within the Project Area. In addition to the research described above, and as part of the Project financing process, Phase I Environmental Site Assessment (Phase I ESA) will be conducted for the Project Area to locate and avoid any additional contaminated sites.[428]

349. To avoid spill-related impacts during construction, Plum Creek will develop a Spill Prevention, Control, and Countermeasures Plan that will outline measures to be implemented to prevent accidental releases of fuels and other hazardous substances and describe the required response, containment, and cleanup procedures to be used in the event of a spill.[429]

350. During operation of the Project, three types of petroleum-product fluids will be used for turbine operation: gear box oil, hydraulic fluid, and gear grease. Turbine hydraulic oils and lubricants will be contained within the wind turbine nacelle, or in the case of car, truck, and equipment fuel and lubricants, within the vehicle. Transformer oil will be contained within the transformer. Fluids will be monitored during maintenance at each turbine and transformer. A small amount of hydraulic oil, lube oil, grease, and cleaning solvent will be stored in the O&M facility. When fluids are replaced, the waste products will be handled according to regulations and disposed of through an approved waste disposal firm in compliance with the requirements of applicable laws and regulations.[430]

### L. Land-Based Economies

351. Applicant has also analyzed the potential for the Project to affect land-based economies of agriculture, forestry, and mining operations in Cottonwood, Murray, and Redwood Counties through introduction of a physical, long-term presence.[431]

352. The majority of the Project Area is in agricultural use. Cultivated land comprises approximately 66,654 acres (approximately 91.2 percent) of the Project Area. Pasture/hay lands comprise approximately 1,302 acres (approximately 1.8 percent) of the Project Area.[432]

353. Agricultural land will be taken out of production where the turbines and access roads are sited (approximately 0.5 to 1 acre per turbine). Additionally, land will also be removed from agricultural production for the collector substations and O&M facility, which together will cover approximately 21 acres. Landowners may continue to plant crops near and up to the turbine pads and access roads. In some instances, agricultural practices will be impacted by requiring new maneuvering routes around the turbine structures for agricultural equipment. The collector substations and O&M facility will be fenced, but agricultural production will be allowed to continue beyond the fenced

[428] *Id.*
[429] *Id.*
[430] *Id.* at 70-71.
[431] *Id.* at 71.
[432] *Id.*

area. Agricultural land taken out of production for access roads will be a permanent loss and agricultural production will not be allowed to continue within the footprint of access roads. Access roads are designed so that they do not unnecessarily impede agricultural production beyond the footprint of the access road. For example, an access road is designed either at the field edge or sufficient distance from the field edge to allow agricultural equipment sufficient distance for operating (i.e., planting, maintaining, harvesting). This means that the narrow strip between the access road and field edge can continue to be farmed.[433]

354. However, agricultural cropping and "wind farming" are generally compatible uses, and the presence of the Project will not significantly impact use of land for agricultural production.[434] Less than one half of one percent of the Project Area will be converted to non-agricultural land use (i.e., wind turbines, access roads, collector substations, and O&M facility). This represents an unavoidable, yet minimal, impact to agricultural land in the Project Area boundary but will not significantly alter agricultural production in the Project Area or Cottonwood, Murray, and Redwood Counties.[435]

355. For turbine and associated facility siting, Applicant will engage in discussions with landowners to identify features on their property, including drain tile, that should be avoided. Impacts to drain tile due to Project construction and operation are not anticipated. However, in the event that damage to drain tile occurs as a result of construction activities or operation of the LWECS, the tile will be repaired according to the lease agreement between Plum Creek and the owner.[436]

356. After construction of the Project is complete, farming will be allowed to continue on all land surrounding the turbines, access roads, collector substations, and O&M facility. The permanent loss of up to 82.8 acres of cultivated crop land (representing impacts from the SG170 layout, which would impact more acres of cultivated cropland than the V162 layout) in the Project Area will not result in the loss of any agriculture-related jobs or a net loss of income.[437]

357. If additional CREP or RIM easements are identified during the title search or in consultation with the Board of Water and Soil Resources (BWSR), and impacts to such conservation easements are unavoidable, Plum Creek will work with easement holders to obtain all necessary consents to construct and operate the Project.[438]

358. The Draft Site Permit includes multiple provisions related to agriculture. First, Section 5.3.5 requires Plum Creek to implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with landowners. Second, Section 5.3.18 requires Plum Creek to take precautions to protect livestock during all phases of the Project's life. Third, Section 5.3.20 requires Plum Creek to take into

[433] *Id.* at 74.
[434] *Id.*; Final EIS at 119 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[435] Ex. 114 at 74 (SP Application).
[436] *Id.*
[437] *Id.* at 74-75.
[438] *Id.*

account, avoid, and promptly repair or replace all drainage tiles broken or damaged during all phases of the Project's life unless otherwise negotiated with affected landowners.[439]

359. The presence of the Project will not significantly impact the agricultural land use or general character of the area. As demonstrated by other wind energy projects in the Midwest, agricultural practices continue during construction and operations.[440] Additionally, no impacts to forestry or mining are anticipated.[441]

### M. Tourism

360. Tourism in the Project Area centers around various festivals and activities hosted by the cities, such as Walnut Grove, which is near the Project Area, and outdoor recreational opportunities.[442]

361. The Laura Ingalls Wilder Museum and Gift Store is in Walnut Grove just south of the intersection of U.S. 14 and 8th Street and approximately 0.6 mile north and west of the Project Area.[443] The museum is open between April and October. Various festivals associated with the museum are held each year during the month of July. In addition, the Ingalls Dugout Site, located approximately 1.5 miles north of the town of Walnut Grove and approximately 1.8 miles from the Project Area along the bank of Plum Creek is open to tourists between May and October each year.[444]

362. Residents and tourists also enjoy recreational opportunities at the NWRs, WPAs, Shetek State Park, AMAs, SNAs, WMAs, WIAs, and snowmobile trails in Cottonwood, Murray, and Redwood Counties.[445]

363. Construction and operation of the Project will have minimal impact to tourism opportunities in the Project vicinity. Construction impacts would mostly be related to increased traffic due to construction activities that may be perceptible to persons traveling through the Project Area to visit tourist destinations in Walnut Grove or nearby recreation lands. These impacts will be minimal, temporary, and isolated to specific areas throughout the Project Area.[446]

364. Because all Project facilities will be located on private lands, and outside of municipal boundaries, there will be no impacts to recreational areas, public lands, or other tourism-related activities. Additionally, all recreation lands will be set back from turbines based on a minimum of the 3 RD by 5 RD setbacks from all non-leased properties per the Commission siting guidelines.[447] During operations, introduction of an aesthetic

[439] Ex. 128 at 9, 13 (Draft Site Permit).
[440] Ex. 114 at 74-75 (SP Application).
[441] *Id.* at 75-77.
[442] *Id.* at 76.
[443] *Id.*
[444] *Id.* at 76-77.
[445] *Id.* at 77.
[446] *Id.*
[447] *Id.* at 43, 77.

change to the predominantly agrarian landscape in the Project Area could impact public enjoyment of tourist attractions. However, these impacts would be minimal.[448]

### N. Local Economies and Community Benefits

365. As indicated in the record and supported by most of the comments from the local community, the Project will positively impact the region by adding infrastructure, creating temporary and permanent jobs, increasing the counties' tax base, and providing lease payments to Project participants.

366. Approximately 250 construction personnel will be required for construction and 11 to 15 permanent personnel will be needed for operation and maintenance of the Project. Plum Creek will use local contractors for portions of the construction process, as available. If no local contractors are available, the influx of 250 construction personnel would equate to a total population increase of approximately 2.1 percent in Cottonwood County, 2.9 percent in Murray County, and 1.5 percent in Redwood County over 2010 census numbers. This would represent a minimal, temporary increase in the total population of the counties in Project Area.[449]

367. Utility scale wind developments provide economic benefits across all phases of development and across industries, such as manufacturing, construction, operation, and maintenance both at the state and local level. Utility scale developments located in rural areas provide noticeable economic impacts on the smaller, rural communities that host them. DOC EERA analyzed the local impacts, including labor and regional economics, wind farm construction labor, the impact of the wind farm on local economies, construction period impacts, and O&M impacts.[450]

### O. Topography

368. The Project's impacts on topography will be minimal. The Project Area has gently rolling terrain that is currently used for agricultural activities, including large machinery similar to that which will be required for construction. Additionally, while the Project Area has approximately 500 feet of elevation change, this change is dispersed across the nearly 20-mile wide Project Area and is not localized to a specific area. Therefore, wind turbines and access roads will not require significant excavation or fill beyond that which will be required for turbine foundations or road bases.[451]

### P. Soils

369. Six soil associations are found within the Project Area: Wilmonton-Letri Everyly Association; Delft-Clarion Association; Mayer-Estherville-Biscay Association; Webster-Ves-Normania-Canisteo Association; Webster-Nicollet-Clarion-Canisteo

[448] *Id.* at 77.
[449] *Id.* at 30.
[450] Final EIS at 76 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[451] Ex. 114 at 81 (SP Application).

Association; and Marysland-Egeland-Arvilla Association.[452] Applicant has addressed the soil types for each association in the SP Application.[453] Generally, the soils within the site are characterized by silty clay loams that are deep, poor to moderately well drained, and underlain by firm glacial till.[454]

370. The United States Department of Agriculture, Natural Resources Conservation Service identifies areas that are important to agricultural use, such as prime farmland and farmland of statewide importance.[455] The Project Area includes prime farmland, which is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. Ninety-one percent of the soils in the Project Area are classified as prime farmland, including those soils identified as prime farmland if the limiting factor is mitigated.[456]

371. Construction activities such as clearing, grading, foundation excavation, and backfilling, as well as the movement of construction equipment within the construction workspace, may result in impacts to soil resources. Potential impacts to soil resources include soil erosion, soil compaction, reduction of soil fertility, and changes to other soil characteristics. Clearing removes protective cover and exposes soil to the effects of wind and precipitation, which may increase the potential for soil erosion and movement of sediments into sensitive environmental areas such as wetlands. Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. These impacts will be temporary and localized to the footprint of facilities.[457]

372. Construction of the wind turbines, access roads, collector substations, and O&M facility will convert prime farmland from agricultural uses to industrial uses. The V162 layout would impact 78.6 acres of prime farmland and the SG170 layout would impact 82.9 acres of prime farmland. Regardless of which layout is constructed, these impacts would represent 0.1 percent of the prime farmland in the Project Area. As such, impacts to prime farmland will be minimal.[458]

373. Plum Creek will obtain a National Pollutant Discharge Elimination System (NPDES) permit to discharge stormwater from construction facilities from the MPCA. Under this permit, Applicant will use best management practices (BMPs) during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion. Such BMPs may include containment of excavated material, protection of exposed soil, and stabilization of restored material. Applicant will develop a

[452] *Id.* at 82-83.
[453] *Id.*
[454] Final EIS at 55 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[455] *Id.*
[456] Ex. 114 at 83 (SP Application).
[457] *Id.* at 84.
[458] *Id.*

Stormwater Pollution Prevention Plan (SWPPP) prior to construction that will include Erosion Control Devices (ECDs) such as silt fencing, revegetation plans, and management of exposed soils to prevent erosion. Because the Project will impact more than 50 acres, Plum Creek will submit the SWPPP to the MPCA for review prior to its finalization.[459]

374. Both Project layouts site access roads away from steep slopes to the degree possible to minimize the amount of grading and soil disturbance. Additionally, access roads, collection lines, and crane paths are co-located to the extent practicable to minimize the footprint of facilities and reduce soil disturbance. Geotechnical soil borings will be conducted at wind turbine foundation locations prior to construction to determine the soil suitability to support turbine foundations; this information will help dictate final design parameters of the turbine and structure foundations.[460]

375. Once construction is complete, Plum Creek will backfill graded and excavated areas with the stored native material and return surface conditions to pre-construction conditions to the extent practicable. Plum Creek would also implement ECDs and seed and mulch the construction workspace consistent with Project's SWPPP.[461]

**Q. Geologic and Groundwater Resources**

376. Due to their size, wind turbines must be sited in areas that are geologically stable. Applicant has analyzed impacts to the Surficial Geology, Bedrock Geology, and Aquifers and Wells.[462]

377. Applicant does not anticipate any impacts to bedrock during construction or operation of the Project, as bedrock within the Project Area is at depths greater than proposed foundation depths of four to six feet deep. Similarly, impacts to groundwater resources are expected to be minimal as the aquifers are also at depths deeper than the excavation for the turbine foundations and permanent Project facilities are not located near previously identified wells.[463]

378. Water use during construction will provide dust control and water for concrete mixes. Up to two temporary batch plants may be needed to supply concrete for construction of the Project. The batch plants may be able to use rural water service, but are more likely to require well water. The water source will be determined prior to construction when a contractor is selected to construct the Project.[464]

379. The O&M facility will likely require a new private well water supply. Water usage during the operating period will be similar to household volume, less than five gallons per minute. Use of water for operations will be negligible. The Project will not require the appropriation of surface water or permanent dewatering. Temporary

[459] *Id.*
[460] *Id.* at 85.
[461] *Id.*
[462] *Id.* at 86.
[463] *Id.* at 87; Final EIS at 41 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[464] Ex. 114 at 87 (SP Application).

dewatering may be required during construction for specific turbine foundations and/or electrical trenches.[465]

380. The batch plant operator will obtain the local permits and access to water supply and will address supply and drawdown issues in those permits. If temporary dewatering is required, Plum Creek will obtain a permit from MDNR.[466]

### R. Surface Water and Floodplain Resources

381. Surface water and floodplain resources for the Project Area were identified by reviewing U.S. Geological Survey (USGS) topographic maps, Minnesota Public Waters Inventory (PWI) maps, and other resources. The majority of the Project Area occurs within the Cottonwood River watershed; the southwestern corner of the Project Area in Murray County occurs within the Des Moines River watershed. Streams within the Project Area include Pell Creek, Dutch Charley Creek, Plum Creek, the Des Moines River, and Highwater Creek.[467]

382. There are no trout streams within the Project Area; the nearest trout stream is Scheldorf Creek, located approximately 9.5 miles south of the Project Area. No waterbodies within the Project Area are identified as Outstanding Resource Value Waters under Minn. R. 7050.0335, subp. 3 (2019).[468]

383. Public waters are all waters that meet the criteria provided in Minn. Stat. § 103G.005, subd. 15 (2020), that are identified on PWI maps authorized by Minn. Stat. § 103G.201 (2020). There are 27 PWI watercourses, two PWI basins, and two PWI wetlands in the Project Area that are listed as MDNR PWI public waters.[469]

384. The Clean Water Act (CWA) (Section 303(d)) requires each state to list streams and lakes that are not meeting their designated uses (i.e., impaired) because of excess pollutants. Five recorded waterbodies within the Project Area are listed as impaired by the MPCA: the Des Moines River; Plum Creek (Judicial Ditch 20A); Pell Creek; Dutch Charlie Creek; and Devils Run Creek. The Des Moines River and Plum Creek (Judicial Ditch 20A) are listed as impaired for fecal coliform and turbidity; Pell Creek is impaired for turbidity; Dutch Charlie Creek is impaired for turbidity and fish bioassessments; and Devils Run Creek is impaired for fish bioassessment.[470]

385. There are no MDNR designated wildlife lakes, pursuant to Minn. Stat. § 97A.101, subd. 2 (2020), or Migratory Waterfowl Feeding and Resting Areas in Cottonwood, Murray, and Redwood Counties.[471]

---

[465] *Id.*
[466] *Id.*
[467] *Id.*; Final EIS at 42 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[468] Ex. 114 at 87 (SP Application); Final EIS at 42 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[469] Ex. 114 at 88 (SP Application); Final EIS at 42 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[470] Ex. 114 at 89 (SP Application); Final EIS at 44 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[471] Ex. 114 at 39 (SP Application); Final EIS at 44 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

386. Federal Emergency Management Agency (FEMA) designated floodplains maps indicate that there are approximately 1,100 acres of 100-year floodplains within the Project Area that are associated with Dutch Charley Creek, Dry Creek, Highwater Creek, Des Moines River, Plum Creek, Pell Creek, Judicial Ditch 3, and two unnamed tributaries. None of the proposed turbines, substation, or access roads are located within a FEMA designated 100-year floodplain.[472]

387. Overall, the Project will have minor, mostly short-term, effects on surface water resources. Project facilities have been designed to avoid impacts on surface water resources to the extent practicable. Wind turbines will be built on uplands to avoid surface water resources in the lower elevations. Some access roads cross streams, however, they will be designed to maintain flow of the waterway.[473]

388. Construction of Project facilities (such as underground electrical collector lines, access roads, crane paths, turbine pads, step-up substation, and the O&M facility) will impact land, and therefore could potentially impact surface water runoff within the Project Area. Ground-disturbing construction activities may also cause sedimentation. These impacts are expected to be minimal and would only occur during construction.[474]

389. There are no permanent impacts for either layout within floodplain areas; this includes turbines, access roads, met towers, collector substations, and the O&M facility.[475]

### S. Wetlands

390. Applicant identified wetlands within the Project Area using Minnesota's update to the National Wetlands Inventory (NWI).[476] DOC EERA notes that "[w]etlands are not a common feature at the site. There are scattered wetlands and wetland complexes associated with watercourses across the site. Most are classified as freshwater emergent with some shrub/scrub and forested wetland types."[477]

391. There are approximately 2,267.1 acres of NWI-mapped wetlands in the Project Area, which constitutes approximately 3.1 percent of the Project Area. More than 78 percent (1,776 acres) of the NWI wetland acreage is mapped as palustrine emergent wetlands (PEM). Palustrine forested wetlands (PFO) comprise 10.9 percent (246.5 acres) of the NWI wetland acreage. Riverine wetlands comprise 5.3 percent (120.7 acres) of the NWI wetland acreage. The remaining 6.4 percent are freshwater pond/lake (91.6 acres) and palustrine scrub-shrub wetlands ("PSS"; 32.1 acres).[478]

392. For the Project, turbines, collector substations, and meteorological towers will be constructed on high portions of the Project Area to maximize the wind resource,

[472] Ex. 114 at 44 (SP Application); Final EIS at 44 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[473] Ex. 114 at 90 (SP Application); Final EIS at 45 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[474] Ex. 114 at 90 (SP Application); Final EIS at 45 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[475] Ex. 114 at 90 (SP Application).
[476] *Id.* at 91.
[477] Final EIS at 47 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[478] *Id.*

and as such, will not permanently impact wetlands. Permanent and temporary impacts on NWI-mapped wetlands are summarized in Table 8.[479] Estimated permanent wetland impacts shown for the SG170 layout are related to an access road.[480]

Table 8. Summary of NWI Wetland Impacts (acres)[105]

| | V162 | | SG170 | |
|---|---|---|---|---|
| **NWI Wetland Type** | **Permanent** | **Temporary** | **Permanent** | **Temporary** |
| Palustrine Emergent Wetland (PEM) | - | 19.2 | 0.3 | 10.8 |
| Palustrine Forested Wetland (PFO) | - | 3.5 | - | 0.6 |
| Riverine | - | 1.3 | - | 0.6 |
| Freshwater Pond/Lake | - | - | - | - |
| Palustrine Scrub-shrub Wetland (PSS) | - | 0.9 | - | - |
| **Total** | **-** | **24.9** | **0.3** | **12.0** |

393. There are no permanent impacts on PWI wetlands from turbines, access roads, collector substations, or the O&M facility from either layout. Both layouts have the same co-located crane path and collection line crossing of a PWI wetlands in the southern portion of the Project Area. Access roads, the O&M facility, and substations will be designed to avoid impacts to PWI wetlands. Temporary impacts associated with crane walkways will also be minimized. Installation of underground utilities is expected to minimize impacts to wetlands or where possible make them coincident with other impacts (e.g., crane walks).[481]

394. Formal wetland delineations of the Project Area will be completed prior to construction, and the layout will be refined to further avoid and minimize wetland impacts. If wetland impacts cannot be avoided, Plum Creek will submit a permit application to the U.S. Army Corps of Engineers (USACE) for dredge and fill within Waters of the United States under Section 404 of the CWA, to the local government unit for Minnesota WCA coverage, and the MPCA for Water Quality Certification under Section 401 of the CWA prior to construction. The USACE provided a general comment letter with these permitting recommendations.[482]

395. Similar to infrastructure crossings of PWI watercourses, Plum Creek will obtain a license to cross PWI wetlands from MDNR prior to construction. Plum Creek may bore the collection line under this PWI wetland complex and associated PWI waterbody. The crane path will be matted to minimize compaction and/or rutting to the PWI wetland.[483]

396. Plum Creek will mitigate impacts to wetlands during construction and operation by protecting topsoil, minimizing soil erosion, and protecting adjacent wetland resources. Practices may include containing excavated material, use of silt fences,

[479] *Id.* at 48-49; Ex. 114 at 92 (SP Application).
[480] Ex. 114 at 92 (SP Application).
[481] *Id.* at 93; Final EIS at 50 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[482] Ex. 114 at 93, Appendix A (SP Application).
[483] *Id.* at 93.

protecting exposed soil, stabilizing restored material, and re-vegetating disturbed areas with non-invasive species. If permanent wetland impacts from the access road in the SG170 layout cannot be avoided, Plum Creek will install a culvert under the access road to maintain water flow within the wetland and minimize impacts.

### T. Vegetation

397. The majority of the land within the Project Area is cultivated cropland (approximately 91 percent) and developed areas (approximately 3.5 percent).[484]

398. Forested areas primarily surround residences as windbreaks and riparian areas along Highwater and Dutch Charley Creeks in the eastern portion of the Project Area. Hay/pasture and grassland/herbaceous lands are present primarily in the western portion of the Project Area. Wetlands are generally associated with streams. The grassland and wetland areas at the site may contain potential remnant native prairie areas. Native prairie is discussed in Section 8.21.2 of the SP Application and may be present within the Project Area.[485]

399. The primary impact from construction of Project would be the cutting, clearing, and removal of existing vegetation within the construction workspace. The degree of impact would depend on the type and amount of vegetation affected, the rate at which the vegetation would regenerate after construction, and whether periodic vegetation maintenance would be conducted during operation. Secondary effects from disturbances to vegetation could include increased soil erosion, increased potential for the introduction and establishment of invasive and noxious weed species, habitat fragmentation and edge effects, and a local reduction in available wildlife habitat.[486]

400. Vegetation will be permanently removed and replaced by wind turbines, access roads, and substation components. The turbines and access roads are sited to avoid forests and groves to maximize turbine output and avoid tree removal. Less than one quarter of one percent of the Project Area will be permanently converted to sites for wind turbines, access roads, and facilities.[487]

401. Temporary vegetation impacts will be associated with crane walkways, the installation of underground collection lines, workspace around turbines, wider access roads, and contractor staging and laydown areas. Plum Creek will initiate restoration of disturbed soils and vegetation as soon as possible after construction activities are completed. Plum Creek will restore areas of disturbed soil in non-cropped areas using weed-free native grasses, forbs, and shrubs. In cropped areas, a temporary cover crop may be planted to stabilize soils depending on the timing of construction completion and the next growing season.[488]

---

[484] *Id.* at 94-95.
[485] *Id.* at 118-19.
[486] *Id.* at 95.
[487] *Id.*
[488] *Id.*

402. Applicant will prepare a construction SWPPP and secure a NPDES Permit for the Project. Applicant will also use BMPs during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil and stabilizing restored material, revegetating non-cropland and range areas with wildlife conservation species, and (wherever feasible) planting a native seed mix in cooperation with landowners.[489]

**U. Wildlife**

403. Wildlife in the Project Area consists of birds, mammals, fish, reptiles, amphibians, and insects, both resident and migratory, which use Project Area habitat for forage, breeding, and/or shelter. The resident species are representative of Minnesota game and non-game fauna that are associated with upland grass, farmlands, and wetland and forested areas. The majority of the migratory wildlife species are birds, including waterfowl, raptors, and songbirds.[490]

404. A Tier I and II Site Characterization Study (SCS) was completed for the proposed Project in July 2019. The Tier I and II questions identified several types of quality habitats in native prairie, WMAs, WPAs, conservation easements, and sites of biodiversity significance ranked as moderate within and adjacent to the Project Area. Habitat assessment work has informed the turbine siting process to minimize impacts to quality habitats. All turbines in both layouts are cited in cultivated crops and will not be sited in native prairie, WMAs, WPAs, NPC, USFWS NWR, or Sites of Biodiversity Significance (SOBS) (of any rank).[491] Wind turbines will be placed, at a minimum, at least five rotor diameters or three rotor diameters, depending on wind direction and property location, from identified management areas within and adjacent to the Project Area.[492]

405. Based on the results of the Tier 1 and Tier 2 studies, Applicant contracted with Western EcoSystems Technology, Inc. (WEST) to conduct USFWS Tier 3 field studies to obtain additional data on birds and bats, including the following:

- General avian and eagle use surveys;
- Raptor and eagle nest surveys, including nest monitoring surveys;
- General acoustic bat surveys; and
- Northern long-eared acoustic bat surveys.

406. Development of the Project, including the construction and operation, is expected to produce a minimal impact to wildlife. Based on studies of existing wind power projects in the United States and Europe, the impact to wildlife would primarily occur to avian and bat populations. Although Plum Creek preconstruction surveys are ongoing, it can be expected that, similar to other wind developments, there is a high likelihood that

[489] *Id.* at 95-96.
[490] *Id.* at 102.
[491] *Id.* at 97, 99-100.
[492] *Id.* at Appendix G.

individual bird and bat fatalities will occur at the Project. However, it is unlikely that Plum Creek will affect species at the population level.[493]

407. Based on the results of post-construction monitoring at similar facilities located on agricultural landscapes in southern Minnesota, estimated bird carcass rates at the Wind Farm would be expected to be within the range reported from studies at other wind facilities in the region. Based on the nearby Odell, Red Pine, and Lakefield Wind Farms, it is estimated that the Project would result in between 2.75 and 4.69 bird carcasses/MW/year. Adjusted fatality rates for all bird species vary between three to six birds/MW/year for the majority of post-construction fatality studies nationwide. As such, Applicant predicts that unavoidable avian fatalities due to collision will be at or below national average.[494] No single species or group is expected to experience a disproportionate amount of estimated mortality or impacts of a magnitude to affect the local or migratory population.[495]

408. No occupied or potential bald eagle nests were located within the Project Area. In 2018, a total of 14 occupied active bald eagle nests were observed within the 10-mile buffer area; in 2019, 17 occupied active bald eagle nests were documented within the 10-mile buffer area. No golden eagle nests were observed.[496]

409. The Draft Midwest Wind Energy Multi-Species Habitat Conservation Plan lists 1.6 miles as a maximum area for turbine setbacks from bald eagle nests, with potential for turbines to be sited closer if evidence shows they are not located within higher use travel corridors. There are two active occupied bald eagle nests outside the Project Area that are located within the 1.6-mile turbine setback area; they are approximately 0.6 and 1.4 miles from the nearest wind turbine to each nest. Additional eagle-nest-activity studies at these nests are ongoing, and the results will be provided by Applicant.[497]

410. Potential unavoidable impacts from the Project on bats are expected to be similar to the postconstruction fatality rates at the above wind facilities, based on the similar land uses within the Project Area, geographic proximity of the projects, and similarities in species composition. Tree-roosting bats that migrate, including the hoary bat, silver-haired bat, and eastern red bat, which were detected during the Project's pre-construction studies, may have the highest risk of collision based on previous bat fatality studies. Qualitative analysis of the acoustic results from 2016 did not identify the species as present in the Project Area, and the species was not identified by acoustic software at any survey sites in 2017. As such, it is believed that the northern long-eared bat is absent from the Project Area.

---

[493] *Id.* at 107.
[494] *Id.* at 111.
[495] *Id.* at 107; Final EIS at 59 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[496] Ex. 114 at 101 (SP Application).
[497] *Id.*

411. No Migratory Waterfowl Feeding and Resting Areas or Important Bird Areas are within or adjacent to the Project Area.[498]

412. Applicant submitted a draft Avian and Bat Protection Plan (ABPP) with its Application and proposes to submit an updated ABPP prior to Project construction, which consists of Applicant's corporate standards for minimizing impacts to avian and bat species during construction and operation of wind energy projects. The ABPP has been developed in a manner that is consistent with the guidelines and recommendation of the USFWS Wind Energy Guidelines. Plum Creek has designed both layouts to minimize avian impacts by siting all turbines in cultivated crops and avoiding high use wildlife habitat (woodlands adjacent to farmsteads), using tubular towers to minimize perching, placing electrical collection lines underground as practicable, and minimizing infrastructure. Plum Creek continues to consult with the Commission, USFWS, and MDNR regarding appropriate mitigation measures for wildlife impacts.[499]

413. The Draft Site Permit addresses protection of wildlife resources, specifically avian and bat protection. Section 7.5.1 of the Draft Site Permit requires Plum Creek to utilize a qualified third party to conduct two full years of avian and bat fatality monitoring following the commencement of commercial operation. Monitoring activities and results will be coordinated directly with MDNR, USFWS, and the Commission. Detailed monitoring protocols agency coordination, and any avoidance and minimization measures will be detailed in the Project's ABPP.[500]

414. Section 7.5 of the Draft Site Permit includes requirements to maintain an updated ABPP in coordination with MDNR, USFWS, and the Commission, and submit quarterly and immediate incident reports. The ABPP includes standards for minimizing impacts to avian and bat species during construction and operation of wind energy projects. It has been developed in a manner that is consistent with the guidelines and recommendations of the USFWS Wind Energy Guidelines. It includes Plum Creek's commitments to wind farm siting and transmission route suitability assessments, construction practices and design standards, operational practices, permit compliance, and construction and operation working training. It also includes additional avoidance and minimization measures that may be implemented in consultation with USFWS and MDNR if avian and bat mortalities exceed an acceptable level.[501]

## V. Rare and Unique Natural Resources

415. Section 7 of the Endangered Species Act (ESA) requires that all federal agencies consider and avoid, if possible, adverse impacts to federally listed threatened or endangered species or their critical habitats, which may result from their direct, regulatory, or funding actions.[502]

---

[498] *Id.* at 113.
[499] *Id.* at 112.
[500] Ex. 128 at 25 (Draft Site Permit).
[501] *Id.* at 25-26.
[502] Ex. 114 at 114 (SP Application).

416. Applicant reviewed the USFWS's Information for Planning and Conservation website for federally listed species, candidate species, and designated or proposed critical habitat that may be present within the proposed Project Area. Plum Creek also reviewed the MDNR's Natural Heritage Information System (NHIS) for documented occurrences of federally listed species, state-listed species, and state species of concern with one mile of the Project Area.[503]

417. Records of federal- and state-listed species documented within the Project Area include one NHIS record of Poweshiek skipperling (a federally endangered species) from 1975, one record of Henslow's sparrow (a state endangered species) during avian use surveys for the Project in 2019, and one NHIS record of Wilson's phalarope (a state threatened species) from 2006.[504]

418. The Project was designed to site all turbines in cultivated cropland and avoided permanent impacts from all Project components (e.g., turbines, access roads, permanent met towers, collector substations, and O&M facility) on MDNR-mapped native prairie, native plant communities, and all SOBS. Plum Creek should therefore avoid impacts to the Poweshiek skipperling, a native prairie obligate. In addition, the record of Poweshiek skippering in the Project Area was from 1975, over 40 years ago; subsequently, the probability of the species being present during Project development and operations is very low. Potential impacts on the state endangered Henslow's sparrow, which nests in large grasslands with a well-developed litter layer and dense vegetation, will be also avoided and minimized through siting turbines in cultivated cropland and by avoiding permanent impacts from other Project components on mapped native prairie, native plant communities, and SOBS. The NHIS record for the Wilson's phalarope was documented in freshwater emergent wetlands. Plum Creek did not site turbines in NWI wetlands and avoided wetlands when designing other Project components, including access roads, O&M facility, and collector substations to the extent practicable. Additionally, after field verification of wetlands, Project facilities may undergo minor shifts so as to avoid wetland features to the extent practicable.[505]

419. In addition to these protective measures, Applicant has agreed to a permit condition related to the MDNR's recommendation concerning the Henslow's sparrow and disturbances between May 15 and July 15. Applicant proposed that the permit issued for the Project shall contain the following condition, to which the MDNR has agreed:

> To avoid impacts to the state-listed Henslow's sparrow, no construction may take place within undisturbed mesic and dry prairie areas between May 15 and July 15 unless presence/absence studies have been performed during the same nesting season as the construction activities and ruled out the actual presence of the Henslow's sparrow.[506]

---

[503] *Id.*
[504] *Id.* at 117.
[505] *Id.*
[506] Plum Creek's Reply Comments-State Listed Bird Species (Apr. 6, 2021) (eDocket No. 20214-172620-01).

420. Based on the NHIS data, Applicant identified one special status bird (upland sandpiper) and one special status amphibian (Great Plains toad) recorded within the Project Area and two special status birds (Wilson's phalarope and trumpeter swan) within the one-mile buffer.[507] The NHIS data show two records (2007) of the upland sandpiper (Minnesota watch list species) within the Project Area and associated with Dutch Charley Creek and a wetland complex.[508]

421. Project-specific acoustic surveys for northern long-eared bats confirmed species absence in July 2019. Additionally, Plum Creek has sited turbines outside a northern-long-eared-bat connected-habitat buffer (1,000 feet from forested areas). In doing so, the Project design minimizes impacts to bats, particularly along riparian areas associated with Dutch Charley Creek and Highwater Creek in the western portion of the Project Area.[509]

422. In addition to rare and sensitive species, the MDNR also maps rare and unique plant communities that may include relatively rare habitats (e.g., prairie) or higher quality or good examples of more common plant communities (e.g., wet meadow). Although most native plant communities have no legal protection in Minnesota, these areas may have the potential to contain undocumented species.[510]

423. Based on a review of the NHIS, one record of native prairie was documented in the Project Area in 1977, a Dry Hill Prairie (Southern Type). Additionally, MDNR's native prairie data for the Project Area includes approximately 316 acres of dry hill prairie (southern) and mesic prairie (southern).[511]

424. Within the Project Area, there are 1,134 SOBS, all rated moderate or below.[512]

425. Plum Creek has sited all turbines in cultivated cropland; the layouts avoid permanent impacts from all Project components (e.g., turbines, access roads, permanent met towers, collector substations, and O&M facility) on MDNR-mapped native prairie, native plant communities, and SOBS.[513]

426. Plum Creek will also minimize temporary impacts on the unit of MDNR-mapped native prairie within the Project Area. Based on preliminary design, the V162 layout may temporarily impact 0.1 acre of MDNR-mapped native prairie; the SG170 layout does not impact MDNR-mapped native prairie.[514]

---

[507] Ex. 114 at 115 (SP Application).
[508] *Id.* at 63.
[509] *Id.* at 117.
[510] *Id.* at 118; *see also* Minn. Stat. § 84.0895 (2020) (regarding protection of threatened and endangered species).
[511] Ex. 114 at 119 (SP Application).
[512] *Id.* at 122.
[513] *Id.* at 120.
[514] *Id.* at 120, 122.

427. Based on the current design, co-located collection lines and crane paths may temporarily impact 2.5 acres and 0.1 acre of SOBS ranked below and moderate, respectively, for the V162 layout. Similarly, the design for the SG170 layout may temporarily impact 1.6 acres of below-ranked SOBS, also with co-located collection lines and crane paths. Plum Creek will continue to coordinate with MDNR on impacts to SOBS, and, as the Project design advances, work with the state agency on potential minimization measures such as narrower temporary construction corridors, boring collection cables, and implementing a native seed mix.[515]

428. Sections 4.7, 7.1, and 7.5 of the Draft Site Permit identify conditions to monitor and mitigate the Project's potential impacts on rare and unique natural resources.[516]

429. MDNR also recommended that Applicant conduct an updated NHIS review of the wind project prior to issuance of a site permit. MDNR responded to Applicant's initial NHIS review request in February 2017, when the project was in its early stages, and MDNR notes that NHIS reviews are only valid for one year due to updating of new information. MDNR contends that it provided concurrence on the T-Line in April 2020, but that records related to review of the Wind Farm are incomplete.[517]

### W. Decommissioning, Turbine Abandonment, and Restoration

430. Applicant has submitted a decommissioning plan meeting the requirements of Minn. R. 7854.0500, subp. 13.[518]

431. The anticipated life of the Project is approximately 30 years beyond the date of first commercial operation.[519]

432. The total estimated decommissioning costs, including salvage value, is approximately $4,423,180 for the 67 SG170 turbines ($66,018 per turbine after salvage value, including associated facilities). For the 74 V162 turbines, the total estimated decommissioning costs, including salvage value, is $4,581,950 ($61,918 per turbine after salvage value, including associated facilities). Applicant will be responsible for all costs to decommission the Project and associated facilities.[520]

433. The cost estimate was prepared: (1) in current dollars; and (2) with the salvage value of equipment or materials calculated separately. The estimate includes: (i) an analysis of the physical activities necessary to implement the approved reclamation plan, with physical construction and demolition costs based on applicable Minnesota Department of Transportation unit bid prices and RS Means material and labor cost

[515] *Id.* at 122-23.
[516] Ex. 128 at 4-5 (Draft Site Permit).
[517] Comment by MDNR (Mar. 10, 2021) (eDocket No. 20213-171766-01).
[518] Ex. 114 at 139, Appendix H (SP Application).
[519] *Id.* at 139.
[520] *Id.* at 140-41.

indices; (ii) the level of effort or number of crews required to perform each of the activities; and (iii) an amount to cover contingencies above the calculated cost.[521]

434. The Project decommissioning cost will be reassessed every five years and updated if necessary. In year 10 following the Project's commercial operation date, Plum Creek will establish a financial surety in the form of escrow, bond, letter of credit, etc. to ensure that decommissioning funds are available at the time of decommissioning.[522]

435. Upon decommissioning, the overhead electrical lines associated with the Project connect the voltage step-up substation(s), located within Project footprint, to the interconnection switching station north of the Project. All poles, conductors, switches, and lines associated with this interconnection link will be removed and hauled off-site to a recycling facility or disposal site. Underground infrastructure such as pole foundations will be removed down to four feet below grade. Pole foundation holes will be filled with a suitable clean compactable material. Topsoil will be applied and the areas and re-vegetated to pre-construction conditions. The interconnection switching station will continue to be owned by the T-Line owner.[523]

436. Under the terms of Applicant's standard wind lease, it also must remove all Project facilities, to a depth of four feet below grade, within twelve months from the date the lease expires or terminates. If Plum Creek were to fail to remove the facilities within that timeframe, the lease allows the lessor to remove and dispose of the facilities. Plum Creek is responsible for reimbursing the lessor for the costs of removal, less any salvage value received. Plum Creek must also maintain any security for removal of the Project that is required by any applicable permits or governmental rules or regulations, if any.[524]

437. Plum Creek will restore and reclaim the site to its pre-Project topography and topsoil quality using BMPs consistent with those outlined by the 2012 USFWS Land-Based Wind Energy Guidelines. Plum Creek will also have a Native Prairie Protection Plan that will provide further BMPs to be used in areas where native prairie, as defined by Minn. Stat. § 84.02, subd. 5 (2020), based on specific site data collected in the Project Area. In non-cropland areas, the goal of decommissioning will be to restore natural hydrology and plant communities to the greatest extent practical while minimizing new disturbance and removal of native vegetation.[525]

438. As provided in Section 11.1 of the Draft Site Permit, Applicant must comply with the provisions in the filed decommissioning plan. It also must file an updated decommissioning plan, incorporating comments and information from the permitting process and any updates associated with the final construction plans and site plans, with

[521] *Id.* at 141, Appendix H.
[522] *Id.* at 141.
[523] *Id.* at 139.
[524] *Id.*
[525] *Id.* at 140.

the Commission 14 days before the pre-construction meeting. The decommissioning plan must be updated every five years.[526]

## XII. Site Permit Conditions

439. The Draft Site Permit issued on October 30, 2020, includes proposed permit conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning, and other aspects of the Project.[527] Many of the conditions contained in the Draft Site Permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Commission.

440. In response to the Draft Site Permit and DEIS, the MDNR provided comments recommending that Plum Creek complete two full years of post-construction bird and bat fatality monitoring, consistent with the recommendations the agency has made in other recent Minnesota wind site permit dockets. Plum Creek has no objection to conducting two years of post-construction bird and bat fatality monitoring.[528] Section 7.5.1 of the Draft Site Permit already reflects a two-year study requirement.[529]

441. Applicant has also agreed to a permit condition related to the MDNR's recommendation concerning the Henslow's sparrow and disturbances between May 15 and July 15. Applicant proposed that the site permit issued for the Project contain the following condition, to which the MDNR has agreed:

> To avoid impacts to the state-listed Henslow's sparrow, no construction may take place within undisturbed mesic and dry prairie areas between May 15 and July 15 unless presence/absence studies have been performed during the same nesting season as the construction activities and ruled out the actual presence of the Henslow's sparrow.[530]

442. As recommended by the SHPO, Plum Creek shall complete a Phase 1a archaeological assessment due to the nature and location of the Project. Plum Creek shall complete a Phase I archaeological survey if the Phase Ia archaeological assessment determines that such a survey is needed or otherwise required. If performed, the Phase I survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified.[531]

443. Applicant requested that Section 5.6.2 of the Draft Site Permit be revised to allow it to obtain permits prior to beginning specific work within the scope of the permit.

---

[526] Ex. 128 at 26 (Draft Site Permit).
[527] *Id.*
[528] Ex. 123 at 15 (Burmeister Direct).
[529] Ex. 128 (Draft Site Permit).
[530] Plum Creek's Reply Comments-State Listed Bird Species (Apr. 6, 2021) (eDocket No. 20214-172620-01).
[531] Written Comments Received on DEIS and Draft Site Permit at 13 (Feb. 22, 2021) (eDocket No. 20212-171205-03).

Plum Creek contends that its proposed modification aligns Section 5.6.2 with Section 10.3, which allows the Permittee to submit site plans and begin construction on a portion of the Project. Therefore, Applicant proposes that Section 5.6.2 be modified to read as follows:

> The Permittee shall demonstrate that it has obtained all necessary permits, authorizations, and approvals by filing an affidavit stating as such, prior to commencing project construction <u>for that portion of the project</u>. The Permittee shall provide a copy of any such permits, authorizations, and approvals upon Commission request.

444. DOC EERA objects to Applicant's proposed modification. DOC EERA contends it is unnecessary because phased construction regularly occurs under the standard permit language, and that there is no support for phased construction in the record. As a result, DOC EERA believes it is preferrable to resolve phased construction details post-permit issuance.[532] The Administrative Law Judge agrees with DOC EERA that this proposed permit condition is not necessary.

445. Redwood County and Murray County both provided comments asking that the Commission require Plum Creek to enter into a development and road use agreement prior to construction that addresses impacts to public roadways and drainage systems.[533] Applicant has committed to entering into development, road use, and drainage agreements with local authorities to address these concerns.[534] Section 5.3.13 of the Draft Site Permit currently contains a condition requiring the permittee to make satisfactory arrangements with the appropriate state, county, or township authorities having jurisdiction over the roadways prior to construction to ensure this occurs.[535]

446. Plum Creek has committed that it will annually contribute $82,800 over twenty years to the Plum Creek Community Fund to support charitable activities within the neighboring communities. The funds will be administered by a volunteer board of directors consisting of, but may not be limited to, participating landowners, township officials and one at-large community member.[536]

447. DOC EERA contends that it is appropriate to include a condition regarding the charitable fund in the Draft Site Permit. DOC EERA recommends the following language be added to the Draft Site Permit:

> Within the first year of commercial operation, the Permittee shall establish the Plum Creek Community Fund to support charitable

[532] DOC EERA Letter Regarding Proposed Findings of Fact, Conclusions of Law, and Recommendations (Apr. 6, 2021) (eDocket No. 20214-172612-01).
[533] Comment by Brozek (eDocket No. 20213-171589-01); 1 p.m. Public Hr'g Tr. at 27-28 (Feb. 16, 2021) (Christoffels).
[534] 1 p.m. Public Hr'g Tr. at 28-29 (Feb. 16, 2021) (Burmeister).
[535] Ex. 128 (Draft Site Permit).
[536] Ex. 100 at 8 (CN Application); Final EIS at 33 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

activities within the neighboring communities. The Permittee shall annually report to the Commission on deposits made into this account and how funds were distributed.[537]

448. In a recent docket, the Commission considered a similar request by DOC EERA for a permit condition related to a charitable fund established in connection with a solar facility. The Commission determined that a site permit condition was not necessary and that reporting regarding the charitable fund could be addressed through requiring compliance filings.[538] Given the Commission's recent analysis of this issue under similar circumstances, and the fact that the record does not reveal any reason to believe that a site permit condition is necessary to ensure Plum Creek's compliance with its commitment, the Administrative Law Judge recommends that the Commission adopt the same approach here rather than imposing a permit condition.

## XIII. Route Permit Criteria

449. The Power Plant Siting Act (PPSA), Minn. Stat. ch. 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."[539]

450. Under the PPSA, the Commission and the Administrative Law Judge 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;

[537] DOC EERA Letter Regarding Proposed Findings of Fact, Conclusions of Law, and Recommendations (Apr. 6, 2021) (eDocket No. 20214-172612-01).
[538] *See In re the Applications of Regal Solar, LLC*, MPUC Docket No. GS-19-395, Order Granting Certificate of Need and Issuing Site Permit at 10 (Apr. 26, 2021).
[539] Minn. Stat. § 216E.03, subd. 7.

(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;[540]

(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;

(7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 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.[541]

451. Also, Minn. Stat. § 216E.03, subd. 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."

[540] Factor 4 is not relevant to this matter because Applicant is not proposing to site a large electric generating plant in this docket.
[541] Minn. Stat. § 216E.03, subd. 7.

452. In addition to the PPSA, the Commission and the Administrative Law Judge are governed by Minn. R. 7850.4100, which mandates consideration of the following factors when determining whether to issue a route permit for a high-voltage T-Line:

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;

D. effects on archaeological and historic resources;

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. effects on rare and unique natural resources;

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

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;[542]

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.[543]

[542] This factor is not applicable because it applies only to power plant siting.
[543] Minn. R. 7850.4100.

453. The record contains sufficient evidence to permit an assessment of the proposed routes using the criteria and factors set out above.

## XIV. Application of Route Permit Criteria to the Project

### A. Effects on Human Settlement

454. Minnesota law requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created during construction and by operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.[544]

#### 1. Displacement

455. All of Plum Creek's proposed routes cross sparsely populated rural areas that are used for agricultural production. To limit proximity to residences and other buildings, Plum Creek designed route segments and alignments that are co-located along existing roadways and property lines where residences are typically not present. All proposed segments allow for rights-of-way that will avoid residences and buildings; there will be no residence or building located within the proposed right-of-way for any segment. Where the Application Alignments are sited near residences, Plum Creek has made every effort to site the T-Line on the opposite side of the road from the house or work with the landowner to route the alignment along property lines behind the house. No residences will be displaced by the Project, and property value impacts are anticipated to be minimal.[545]

#### 2. Land Use and Zoning

456. Plum Creek reviewed information available from the 2016 National Land Cover Database (NLCD) to identify existing land cover types and uses crossed by the Application segments. The primary land cover type crossed by the Application segments is cultivated crop land. The second most common land cover type crossed is developed, which includes roads and illustrates the degree of co-location for all segments. According to the NLCD data, the Green, Blue, and Red Segments also cross some emergent herbaceous wetlands, while the Yellow Segment does not. All four segments cross herbaceous lands, but only the Blue and Red Segments cross deciduous forest lands and hay/pasture land.[546]

457. 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.

458. Plum Creek reviewed county zoning information for Cottonwood, Murray, and Redwood Counties to identify any additional routing constraints for the proposed

[544] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100(A).
[545] Ex. 101 at 42 (RP Application); Final EIS at 96-98 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[546] Ex. 101 at 56-57 (RP Application).

transmission line. NESC standards require certain clearances between transmission line facilities and buildings for safe operation of the transmission line. Areas zoned as commercial, industrial, or residential are the most likely areas where future development of residences and other structures may occur.[547]

### 3. Noise

459. As noted above, the MPCA has promulgated Noise Standards for residential areas, NAC-1, which is the applicable classification for the T-Line Project Area, in Minn. R. ch. 7030.[548] The most stringent standard is at night, 50 dB(A), $L_{50}$.[549]

460. The proposed Project is in a rural area. Ambient noise levels in these types of locations are generally between 30 and 40 dB(A) during daytime hours, with higher ambient noise levels of 50 to 60 dB(A) expected near roadways. The primary noise receptors within the route would be residences.[550]

461. Noise from the Project may arise from construction activities and the normal operation of the T-Line, Collector Substations and Switching Station.[551]

462. During the construction of the Project, temporary, localized noise from heavy equipment and increased vehicle traffic is expected to occur along the right of way during daytime hours.[552] Plum Creek will use sound-control devices on vehicles and equipment (for example, mufflers), conduct construction activities during daylight hours, and not run vehicles and equipment unnecessarily.[553]

463. During fair conditions, noise from the T-Line is anticipated to be inaudible. The T-Line may produce noise during rainy conditions due to the corona effect, a type of electrical conduction that occurs in the atmosphere near the conductor that may result in an audible hissing and cracking sound. It is likely, however, that most of the time when climatic conditions result in corona, the noise levels of falling rain will exceed the corona noise making the noise from the T-Line inaudible.[554]

464. Audible noise from the T-Line will only be expected during quiet, foggy, or rainy conditions and will be rare. Even in these rare cases, noise levels will be well below state standards.[555]

465. Noises associated with a substation result from the operation of transformers and switchgear. Transformers produce a consistent humming sound, resulting from magnetic forces within the transformer core. This sound does not vary with

---

[547] *Id.* at 61.
[548] Ex. 121 at 3 (Duncan Direct).
[549] Minn. R. 7030.0040.
[550] Final EIS at 165 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[551] *Id.*
[552] *Id.*
[553] Ex. 101 at 43 (RP Application).
[554] *Id.* at 44; Final EIS at 166 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[555] Ex. 101 at 44-45 (RP Application).

transformer load. Switchgear produces short-term noises during activation of circuit breakers. These activations are infrequent. The two Wind Farm collector substations and Switching Station will be designed such that the MPCA noise limits will not be exceeded at the edge of the boundaries of the substations and Switching Station.[556]

### 4. Aesthetics

466. Topography along the proposed routes is generally flat and the vegetation cover is uniformly low, making the topography vulnerable to visual disruptions. Viewsheds in this area are generally broad and uninterrupted, with only small scattered areas where they are defined by trees or topography. The settlements in the vicinity are residences and farm buildings (inhabited and uninhabited farmsteads) scattered along rural county roads. The area is also shaped by a built environment. Horizontal elements, such as highways and county roads, are consistent with the long and open viewsheds in the area. Vertical elements such as T-Lines and wind turbines are visible from considerable distances and are the tallest and often the most dominant visual feature on the landscape.[557]

467. There are two wind farms within 15 miles of the proposed routes that may be visible depending on atmospheric conditions: the Jeffers Wind Project is located approximately 10 miles southeast of the T-Line Project Collector Substation 1 and the Marshall Wind Project is located approximately 14 miles west of the Red Segment. The Plum Creek Wind Farm will be at the southern end of the T-Line Project. At the northern end of the T-Line Project near the Switching Station, the existing Brookings-to-Hampton 345 kV T-Line structures are focal points on the landscape.[558]

468. The T-Line Project's transmission-line structures and conductors will create aesthetic impacts that are anticipated to be minimal to moderate. The degree of impact will be minimal for the Green, Yellow, and Red Segments and moderate for the Red Segment as it is immediately adjacent to the town of Walnut Grove. The T-Line Project alter the current landscape through construction of steel poles of 110 to 125 feet.[559]

469. Plum Creek has minimized aesthetic impacts by choosing routes where a T-Line is most harmonious with the landscape, such as along roads and field edges. Other minimization measures include crossing rivers and streams using the shortest distance possible and with an existing road, avoiding placing structures directly in front of residences, and using construction methods that minimize damage to vegetation near the T-Line.[560]

470. Construction of an up-to-15-acre Switching Station in an existing agricultural field will also present a new visual impact. The structures within the Switching Station will be 70 to 100 feet high at their highest for lighting protection but will on average

[556] Final EIS at 167 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[557] *Id.* at 162.
[558] *Id.*
[559] Ex. 101 at 48 (RP Application); Final EIS at 163 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[560] Ex. 101 at 48 (RP Application); Final EIS at 163 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

have the profile of a single-story building and will consist of high-voltage electrical equipment. In addition, down-shielded lighting will help to maintain Switching Station security while minimizing lighting impacts.[561]

### 5. Socioeconomics and Property Values

471. Impacts to socioeconomics are anticipated to be minimal and positive for all routing options. The Project will not disrupt local communities or businesses and does not disproportionately impact low-income or minority populations. Adverse impacts are not anticipated.[562]

472. Construction of the T-Line will take approximately one year, and the construction workforce will be approximately 30 workers. The influx of additional construction personnel in the T-Line area will have a small positive impact on the local economy from construction crew expenditures in the local community (e.g., lodging, fuel, food). Construction materials (e.g., lumber, concrete, aggregate) may be purchased from local vendors when feasible. In addition, long-term beneficial impacts to the local tax base will result from the incremental increase in revenues from utility property taxes.[563]

473. The Final EIS provides a discussion of literature that demonstrates that any impacts to property values are anticipated to be minimal.[564] Research indicates that property value impacts vary, the majority concludes that high voltage transmission lines have "small or no effects on the sale price of properties."[565] Research on the relationship between property values and proximity to transmission lines has "not identified a clear cause and effect relationship."[566]

474. The research has revealed trends which are generally applicable to properties near transmission lines:

- If negative impacts on property values do occur, the potential reduction in property values ranges from 1 to 10 percent.
- Impacts on property values decrease with distance from the line. However, other amenities, such as proximity to schools or jobs, lot size, square footage of a house, and neighborhood characteristics, tend to have a much greater effect on sale price than the presence of a power line.
- Negative impacts appear to diminish over time. The value of agricultural property is likely to decrease if the power line poles are placed in an area that inhibits farming operations.[567]

---

[561] Ex. 101 at 48 (RP Application); Final EIS at 163 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[562] Final EIS at 169-70 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[563] Ex. 101 at 52 (RP Application).
[564] Final EIS at 168 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[565] *Id.*
[566] *Id.* at 167-68.
[567] *Id.* at 168.

475. Based on the record evidence, socioeconomic impacts of the T-line are anticipated to be positive and any impact on property values will be minimal.

### 6. Cultural Values

476. The communities in the T-Line Project Study Area primarily have cultural values tied to agricultural production, light industry, and recreational activities such as hunting and fishing.[568]

477. In addition, the history surrounding Laura Ingalls Wilder, author of the *Little House on the Prairie* book series, plays an important role in the cultural values of the area. The Ingalls Dugout Site (a NRHP-nominated site), is located approximately 1.5 miles north of the town of Walnut Grove and approximately 250 feet east of the proposed Red Segment near the banks of Plum Creek.[569]

478. No impacts to cultural values are anticipated because of the T-Line.[570]

### 7. Recreation

479. Recreation in the Project Study Area consists primarily of outdoor recreational opportunities, such as hiking, fishing, camping, and snowmobiling. Recreational opportunities on public lands include a 60-acre USFWS NWR parcel associated with Pell Creek, two MDNR WMAs—the Wahpeton Prairie WMA and the Westline WMA— partially within the T-Line Project Study Area, two snowmobile trails located in Redwood County, and several county and city parks. Each of these public lands offers many recreational opportunities that attract residents and tourists.[571]

480. During the initial open house, local residents identified an area along the Cottonwood River that they felt should be avoided by any new T-Line. This avoidance area covers approximately 850 acres and is used by local families for recreation (camping, fishing, and four-wheeling). The site is located adjacent to the Cottonwood River between the Blue and Red Segments; approximately 0.8-miles east of the Cottonwood River Alternative Alignment and approximately 0.3-miles east of the Red Segment's CSAH 5 Alignment. The area lies approximately one mile west of the Blue Segment.[572]

481. Impacts on recreation and tourism due to construction of the T-Line Project are anticipated to be minimal and temporary in nature. Short-term disturbances, such as increased noise and dust, could detract from nearby recreational activities and could, depending on the timing, affect hunting by temporarily displacing wildlife. Wildlife, however, is expected to return to the area once construction has been completed.[573]

---

[568] Ex. 101 at 52 (RP Application); Final EIS at 173 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[569] Ex. 101 at 52 (RP Application); Final EIS at 173 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[570] Final EIS at 174 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[571] Ex. 101 at 55 (RP Application); Final EIS at 202 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[572] Final EIS at 202 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[573] *Id.* at 203; Ex. 101 at 55-56 (RP Application).

482. Once constructed, the T-Line Project itself could impact aesthetics in the Project area or at a specific recreational feature. Long-term impacts to recreation and tourism are anticipated to be minimal. Persons using snowmobile trails crossed by T-Line segments may experience aesthetic impacts due to the proximity of T-Line structures.[574]

### 8. Public Service and Infrastructure

483. T-Line projects have the potential to impact public services during both construction and operation.[575]

484. Plum Creek will coordinate construction activities with MnDOT and the affected counties to develop a traffic management plan that minimizes disruption to local traffic during construction.[576]

485. This increase in population may temporarily increase in individuals requesting the use of public services. However, this minimal increase in population should not create the need for more public services than already exist. Therefore, impacts to the public services system associated with a temporary increase in population are not anticipated.[577]

486. Plum Creek will coordinate with utility providers and authorities, including emergency services, to determine the locations of facilities, appropriate safety precautions and standards, and measures to address these precautions and standards. Plum Creek may meet with utility providers and residents as needed to avoid direct and indirect impacts to their services.[578]

487. Within the T-Line Project Study Area, electric utilities are provided by Nobles Cooperative Electric, South Central Electric Association, and Redwood Electric Coop. Natural gas for the T-Line Project Study Area is provided by Great Plains Natural Gas Company and Minnesota Energy Resources Corporation. In addition to the Great Plains Natural Gas Company and Minnesota Energy Resources Corporation's facilities, the Blue and Red Segments also cross one Northern Natural Gas pipeline in Redwood County. The Green and Yellow Segments do not cross existing pipelines.[579]

488. T-Line Project activities could damage existing pipelines during grading, but this is improbable. Prior to construction, Plum Creek will locate and mark underground utilities using the Gopher State One-Call system. If Plum Creek needs to cross an underground utility or other underground infrastructure with heavy equipment, they will employ BMPs to protect the infrastructure, such as construction matting.[580]

---

[574] Ex. 101 at 56 (RP Application); Final EIS at 203 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[575] Ex. 101 at 65 (RP Application).
[576] Final EIS at 180 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[577] *Id.* at 182.
[578] Ex. 101 at 66 (RP Application).
[579] *Id.*
[580] *Id.* at 66-67.

489. The Green and Yellow Segments do not cross and are not co-located with railroads. Both the Blue and Red Segments cross one Dakota, Minnesota and Eastern (DME) Railroad east of Walnut Grove. The Blue Segment overlaps this railroad for one mile between Eagle Avenue and CSAH 10 and parallel to U.S. 14. In this location, the proposed alignment (right of way) is sited immediately outside the U.S. 14 right of way, and over 300 feet from the rail line. The Red Segment crosses the DME Railroad along Duncan Avenue, immediately east of Walnut Grove.

490. Impacts to the DME Railroad are not anticipated as a result of construction and operation of the T-Line Project. Plum Creek will obtain all the necessary railroad crossing permits from DME for their rail line. Additionally, Plum Creek will coordinate with the appropriate railroad personnel during construction to schedule electrical conductor stringing over the rail line will be for the safety of construction personnel and rail line operations.[581]

491. There are no operating public-use or private-use airports or heliports in the T-Line Project Study Area. The nearest public airport is located approximately 4.5 miles west of the T-Line Project Study Area in Tracy, Minnesota. There are no known private landing strips in the T-Line Project Study Area. There will be no impact to airports or airstrips.[582]

492. No impacts on radio, television, cellular phones, or GPS units are expected from construction or operation of the Project.[583]

## B. Effects on Public Health and Safety

### 1. Construction and Operation of Facilities

493. The T-Line Project will meet local, state, and NESC safety standards. The proposed T-Line will be equipped with protective devices to prevent damage from T-Line or pole falls or other potential accidents. The T-Line Project will be equipped with protective devices (circuit breakers and relays located in substations where T-Lines terminate) to safeguard the public in the event of an accident, or if a structure or conductor falls to the ground. The protective equipment will de-energize the T-Line should such an event occur. In addition, substation facilities will be fenced and accessible only by authorized personnel. Signage around the T-Line Project will warn the public of the safety risks associated with the energized equipment.[584]

494. The construction of the T-Line Project is not expected to have a negative impact on public health or safety. Construction crews will comply with Occupational Safety and Health Administration measures to ensure their own safety.[585]

---

[581] Final EIS at 181 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[582] *Id.* at 181.
[583] Ex. 101 at 66 (RP Application); Final EIS at 111-15 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[584] Ex. 101 at 33 (RP Application).
[585] *Id.*

### 2. Electric and Magnetic Fields

495. Electric fields on a T-Line are solely dependent upon the voltage of the line, not the current. Electric-field strength is measured in kilovolts per meter (kV/m), and the strength of an electric field decreases rapidly as the distance from the source increases. Electric fields are easily shielded or weakened by most objects and materials, such as trees or buildings.[586]

496. Magnetic fields are created by the electrical current (measured in amps) moving through a T-Line. The strength of a magnetic field is proportional to the electrical current and is typically measured in milliGauss (mG). As with electric fields, the strength of a magnetic field decreases rapidly as the distance from the source increases. Unlike electric fields, however, magnetic fields are not shielded or weakened by objects or materials.[587]

497. There is no federal standard for T-Line electric fields. The Commission has imposed a maximum electric field limit of 8 kV/m measured at one meter (3.28 feet) above the ground. There are presently no Minnesota regulations pertaining to magnetic field exposure.[588]

498. Research on the potential influence of electric and magnetic fields (EMFs) on organisms and human health has been conducted over many decades to understand basic interactions of EMFs with biological organisms and cells, and to investigate potential therapeutic applications. In the 1970s, questions arose about potential adverse health effects from EMFs and health conditions, including cancer. Over the past 40 years, considerable additional research has been conducted to address uncertainties in those studies and to determine if there was any consistent pattern of results from human, animal, and cell studies that would support such an association.[589]

499. Overall, the published conclusions of these scientific review panels have been consistent. None of the panels concluded that either electric fields or magnetic fields are a known or likely cause of any adverse health effect at the long-term, low exposure levels found in the environment. The Commission has likewise repeatedly found that there is insufficient evidence to demonstrate a causal relationship between EMF exposure and any adverse human health effects.[590]

500. Predicted maximum electric fields for the Project vary by structure type, but in all cases are anticipated to be less than the Commission's 8 kV/m standard.[591]

501. No adverse health effects from EMF are anticipated for the T-Line.[592]

---

[586] *Id.* at 34.
[587] *Id.*
[588] *Id.* at 33; Final EIS at 186 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[589] Ex. 101 at 39 (RP Application).
[590] *Id.* at 40.
[591] *Id* at 34; Final EIS at 188 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[592] Final EIS at 187 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

## C. Effects on Land-Based Economies

### 1. Agriculture

502. Agriculture is the primary land-based economic resource in the Project area. The predominant undeveloped land cover type crossed by the Green, Yellow, Blue, and Red Segments is cultivated crop land. The average farm size in the three counties is similar, averaging 454 acres, and generally larger than the average size of farms in Minnesota farms (349 acres). Most of the soils crossed by the four routes are classified as "Prime Farmland" and "Farmland of Statewide Importance." Approximately 95 percent of the soil crossed by the Green Segment, 98 percent of the soil crossed by the Yellow Segment, 94 percent of the soil crossed by the Blue Segment, and 91 percent of the soil crossed by the Red Segment are identified as prime farmland.[593]

503. Some of the cultivated crop areas along the Green, Yellow, Blue, and Red Segments are enrolled in the CREP.

504. No CREP parcels have been identified within the 150-foot right-of-way of the Green or Yellow Segments. Seven CREP parcels have been identified within the right-of-way of the Blue Segment, five of which are also part of the RIM program. Six CREP parcels have been identified within the right-of-way of the Red Segment, two of which are also part of the RIM program.[594]

505. Construction of the T-Line Project could cause minimal, temporary impacts to farmland from soil compaction and rutting, accelerated soil erosion, crop damage, temporary disruption to normal farming activities, and introduction of noxious weeds to the soil surface. During construction, a portion of prime farmland will be taken out of agricultural production due to the development of the T-Line Project. The installation of poles will also remove some agricultural land from production during operation of the T-Line Project.[595] However, the impacts will not have a significant impact on total prime farmland within the state of Minnesota or within Cottonwood, Murray, and Redwood Counties.[596]

### 2. Forestry

506. There are no forestry operations along the rights-of-way of any proposed segment. Wooded areas along the four segments consist of isolated rows of trees that are used as shelter belts or wind breaks along the edges of agricultural fields or surrounding farmsteads and in riparian areas along waterbodies. Where possible, the proposed alignments have been designed to either cross a road to avoid tree clearing or

[593] Ex. 101 at 74 (RP Application).
[594] *Id.*
[595] *Id.* at 75, Table 6.3.1-2 (noting that there will be only 0.4 total acres impacted by T-Line structures in cultivated crop land by either alignment).
[596] *Id.* at 74.

are routed on the side with fewest trees. No impacts to forestry resources or operations are anticipated as a result of the T-Line.[597]

### 3. Tourism

507. Tourism in the T-Line Project Study Area centers around outdoor recreational opportunities and various festivals and activities hosted by the cities within the T-Line Project Study Area, Walnut Grove and Lucan.[598]

508. The Laura Ingalls Wilder Museum and Gift Store is in Walnut Grove just south of the intersection of U.S. 14 and 8th Street and approximately 0.7 mile west of the Red Segment. The museum is open between April and October and features collections of historical documents, quilts, and other household items that belonged to the Ingalls family, as well as memorabilia from the popular television show *Little House on the Prairie*. The museum is spread out between a number of buildings including an 1898 depot, a chapel, an onion-domed house, a dugout display, little red schoolhouse, early settler home, and a covered wagon display.[599]

509. In addition to the Laura Ingalls Wilder Museum, another popular tourist attraction is the Ingalls Dugout Site, a NRHP-nominated site located approximately 1.5 miles north of the town of Walnut Grove and approximately 250 feet east of the Red Segment along the banks of Plum Creek. The site is located on private land but is open to tourists between May and October each year.[600]

510. Construction of the T-Line Project is not anticipated to affect public access to nearby tourism and recreational opportunities. Impacts to tourism will mostly be related to T-Line Project construction, which will be minimal, temporary, and isolated to specific areas throughout the Application segments.[601]

511. The proposed route segments will not impact the Laura Ingalls Wilder Museum and Gift Store or the Ingalls Dugout Site. Construction and operation of the T-Line Project is not expected to impact public access to any of the festivals associated with the museum or held by the City of Lucan. Short-term increases in noise and dust will occur during construction of the T-Line Project and could detract from public enjoyment of nearby recreational activities and tourism. However, these impacts will be minimal, and use of BMPs to limit noise and fugitive dust during construction will effectively mitigate their effects.[602]

512. Impacts on recreation and tourism due to construction of the T-Line Project are anticipated to be minimal and temporary in nature. Short-term disturbances, such as increased noise and dust, could detract from nearby recreational activities and could,

[597] Final EIS at 201 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[598] Ex. 101 at 76 (RP Application).
[599] *Id.* at 77.
[600] *Id.*
[601] *Id.*
[602] *Id.*

depending on the timing, affect hunting by temporarily displacing wildlife. Wildlife, however, is expected to return to the area once construction has been completed.[603]

513. Once constructed, the T-Line Project itself could impact aesthetics in the Project area or at a specific recreational feature leaving recreation less enjoyable for the average person. These long-term impacts to recreation and tourism are anticipated to be minimal. Persons using snowmobile trails in the project area may experience aesthetic impacts due to the proximity of T-Line structures.[604]

#### 4. Mining

514. Mining does not comprise a major industry in the Project vicinity; however, there are several aggregate mining sites in the Project Study Area. None of these sites is within the right-of-way of a proposed routing option. There are two gravel pits mapped along the Cottonwood River in the area between the Blue and Red Segments. No gravel pits are mapped within two miles of the Green and Yellow Segments. No impacts to existing aggregate mining operations are anticipated as a result of the project.[605]

### D. Effects on Archaeological and Historic Resources

515. Plum Creek conducted background research on known cultural resources in October 2019 by requesting information from the OSA and the SHPO.[606] The archaeological and historic architectural resources review extended to within one mile of the proposed segments and within each segment's width.[607]

516. **Green Segment**. No previously recorded archaeological sites were identified within one mile of or within the route width of the Green Segment. One previously recorded historic architectural resource was identified within one mile of the Green Segment; this resource is not present within the Green Segment's route width. The previously recorded architectural resource is St. Olaf Lutheran Church, located along CSAH 7 north of the Green Segment. According to information obtained from OSA and SHPO, this resource was not evaluated for listing in the NRHP.[608]

517. **Yellow Segment**. No previously recorded archaeological sites were identified within one mile of or within the route width of the Yellow Segment. Two previously recorded historic architectural resources were identified within one mile of the Yellow Segment; these resources are not present within the Yellow Segment's route width. One of the historic architectural resources is St. Olaf Lutheran Church, which is northwest of the Yellow Segment. The second historic architectural resource is the District

[603] Final EIS at 203 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[604] *Id.*
[605] *Id.* at 202.
[606] Ex. 101 at 78 (RP Application).
[607] Final EIS at 205 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[608] Ex. 101 at 81 (RP Application).

School No. 43, located along CSAH 10. Neither of these previously recorded historic architectural resources was evaluated for listing in the NRHP.[609]

518. **Blue Segment**. Three previously recorded archaeological sites were identified within one mile of the Blue Segment. The three previously recorded archaeological sites within one mile of the Blue Segment consist of two precontact lithic scatters and one precontact artifact scatter located along the Cottonwood River and Plum Creek in Redwood County. None of the previously recorded archaeological sites within one mile of the Blue Segment were evaluated for listing in the NRHP. No previously recorded archaeological sites were identified within the Blue Segment's route width. Eight previously recorded historic architectural resources were identified within one mile of the Blue Segment. The previously recorded historic architectural resources are all within Redwood County and consist of the Tellefsen Farmhouse, Trinity Lutheran Church, Brau Harness Shop, Lucan Section House, the Chicago and North Western Railroad Depot, the Sleepy Eye Milling Company Elevator, Lucan Village Hall, and Trunk Highway 14. Of these eight resources, only the Chicago and North Western Railroad Depot is listed in the NRHP. One previously recorded historic architectural resource was identified within the route width of the Blue Segment. The previously recorded resource is an historic bridge, Bridge 89830; this resource was not evaluated for listing in the NRHP.[610]

519. **Red Segment**. Seven recorded archaeological sites lie within one mile of the Red Segment in Redwood County. Most notably, the remains of Laura Ingalls Wilder's homesite along Plum Creek lies approximately 250 feet east of the Red Segment's route width (the Ingalls Dugout Site). This site preserves the collapsed foundation of the former sod house and surrounding landscape which served as the setting for Laura Ingalls Wilder's *Little House on the Prairie* book series. The site also serves as an example of earthen frontier home sites not otherwise well-preserved in the record. Due to the site's historic significance, it was nominated to the NRHP in 1978; however, Plum Creek reviewed the NRHP database that is maintained by the National Park Service and the Ingalls Dugout Site is not listed in the database. The remaining sites consist of five precontact lithic scatters, concentrated primarily along Plum Creek, and one railroad depot (the Walnut Grove Whistle Stop). According to information obtained from OSA and SHPO, none of these resources was evaluated for listing in the NRHP. One previously recorded archaeological site lies within the route width of the Red Segment. This site consists of a precontact lithic scatter that was not evaluated for listing in the NRHP. Twelve previously recorded historic architectural resources were identified within one mile of the Red Segment. The previously recorded historic architectural resources are all within Redwood County and consist of Walnut Grove High School, Trinity Lutheran Church, Methodist Episcopal Church, Walnut Grove State Bank, Walnut Grove Cooperative Creamery, First State Bank Building, the Lantz House, the Bondeson House, Swoffer & Swoffer Grain Elevator, Bridge No. L6913, Lucan Village Hall, and Trunk Highway 14. Of these 12 recorded historic architectural resources, only the Walnut Grove Cooperative Creamery is listed in the NRHP. One previously recorded historic architectural resource was identified within the route width of the Red Segment. This

[609] *Id.*
[610] *Id.*

resource is the Welsh Farmstead in Redwood County; this historic architectural resource was not evaluated for listing in the NRHP.[611]

520. Information regarding the location of previously documented archeological and historic resource sites was taken into consideration during initial segment design. Plum Creek designed the Application segments to avoid any direct physical impacts to all previously documented archaeological and historic architectural resources identified during the background literature review.[612]

521. Plum Creek understands the area surrounding the Project also has potential to contain additional, previously undocumented cultural resources. After the final route is ordered by the Commission, and in consideration of the literature search results and coordination with SHPO, Plum Creek will conduct field surveys in high-potential areas that could host previously unrecorded cultural resources. The survey protocol and report will be coordinated with and approved by SHPO. If archaeological or historic architectural resources are identified as a result of field surveys, Plum Creek will work with SHPO to identify measures to avoid, minimize or mitigate any effects to these resources.[613]

## E. Effects on the Natural Environment

### 1. Air Quality

522. Potential air quality impacts associated with the T-Line Project come from two primary sources: short-term emissions from construction vehicles and ozone and nitrogen oxide emissions from operating the facility.[614]

523. During construction, the amount of dust generated will be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic, vehicle types, and road surface characteristics. Dust emissions will be greater during dry periods and in areas where fine-textured soils are subject to surface activity. If construction activities generate problematic dust levels, Plum Creek may employ construction-related practices to control fugitive dust, such as application of water or other commercially available dust control agents on unpaved areas subject to frequent vehicle traffic, reducing the speed of vehicular traffic on unpaved roads, and covering open-bodied haul trucks.[615]

524. Air emissions during construction will primarily consist of emissions from construction equipment and will include carbon dioxide, NOX, and particulate matter; dust generated from earth disturbing activities will also give rise to particulate matter. Emissions will be dependent on weather conditions, the amount of equipment at any given location, and the period of operation required for construction at that location. Any emissions from construction will be similar to those from agricultural activities common in

[611] *Id.* at 81-82.
[612] *Id.* at 82.
[613] *Id.*
[614] *Id.* at 84.
[615] *Id.*

the T-Line Project Study Area and will only occur for short periods of time in localized areas.[616]

525. During operation of the line, air emissions will be minimal. An insignificant amount of ozone is created due to corona from the operation of transmission lines. A corona signifies a loss of electricity and Plum Creek has engineered the T-Line so as to limit the corona. The production rate of ozone due to corona discharges decreases with humidity and less significantly with temperature. Rain causes an increase in ozone production, but also accelerates the decay of ozone. Ozone production by high-voltage T-Lines is not detectable during fair weather above ambient conditions. Ozone production under wet-weather conditions is detectable with special efforts but is still considered insignificant.[617]

526. Design of the T-Line also influences its ozone production rate. The production rate decreases significantly as the conductor diameter increases and is greatly reduced for bundled conductors over single conductors. The production rate of ozone increases with applied voltage. The emission of ozone from the operation of a T-Line of the voltages proposed for the T-Line Project is not anticipated to have a significant impact on air quality.[618]

### 2. Water Quality and Resources

#### a. Water Quality

527. Under the federal CWA, states have the primary responsibility for establishing, reviewing, and revising water quality standards, which consist of the designated uses of a waterbody, the numerical values or narrative water quality criteria necessary to protect those designated uses. The MPCA is the agency charged with classifying waterbodies in Minnesota and has grouped the waters of the state into seven designed use classifications per Minn. R. 7050.0140 (2019).[619]

528. The Green and Yellow Segments do not cross any waters identified as impaired on the MPCA's Inventory of Impaired Waters or waters of the state identified in any of the classes listed in Minn. R. 7050.0140. Lone Tree Creek, crossed by the Red Segment, is expressly classified in Minn. R. 7050.0470 (2019) as a Class 7 waterbody (i.e., limited resource values). The other waterbodies crossed by both the Blue and Red Segments are defined by default in Minn. R. 7050.0430 (2019) as Class 2B (aquatic warm water community) and 3C (industrial consumption).[620]

529. Short-term, minor, T-Line Project–related water-quality impacts may occur during the construction of the proposed T-Line Project even though mitigation measures will be implemented to prevent sedimentation. These impacts will be associated with the

[616] *Id.*
[617] *Id.* at 84-85.
[618] *Id.* at 85.
[619] *Id.* at 95.
[620] *Id.* at 95-96.

soils from areas disturbed during construction being washed by stormwater into adjacent waters during rainstorm events. Increased turbidity and localized sedimentation of the stream bottom may occur from the runoff. If any of these events occur, however, these impacts will be temporary and will not significantly alter water quality conditions due to the minimal soil disturbance that is expected to occur in any one location during construction of the T-Line Project.[621]

### b. Surface Waters

530. T-Lines have the potential to adversely impact surface waters through construction activities which move, remove, or otherwise handle vegetative cover and soils. Changes in vegetative cover and soils can change runoff and water-flow patterns.[622]

531. Some watercourses and water bodies within the project area are designated as public waters and are listed in the PWI by the State of Minnesota. These water resources are under the jurisdiction of the MDNR. Additionally, Section 303 of the federal CWA requires all states to identify and designate water bodies that have pollution levels that exceed established water quality standards. In Minnesota, the MPCA is responsible for the designation of impaired waters.[623]

532. **Green Segment**. The Green Segment right-of-way crosses eight waterbodies. All of the waterbodies crossed are intermittent streams; of these, two are unnamed PWI waters. There are no PWI lakes, or MDNR-designated shallow lakes crossed by the Green Segment alignment. One creek crossed by the Green Segment is listed as impaired on the 303(d) list (Pell Creek).[624]

533. **Yellow Segment**. The Yellow Segment right-of-way crosses four waterbodies. As with the Green Segment, all of the waterbodies crossed are intermittent streams. Of these streams, two unnamed streams are PWI waters. There are no PWI lakes or MDNR-designated shallow lakes crossed by the Yellow Segment alignment. One creek crossed by the Yellow Segment is listed as impaired on the 303(d) list (Pell Creek).[625]

534. **Blue Segment**. The Blue Segment has 19 waterbody crossings, including 13 intermittent and six perennial streams. Of these streams, the following nine are PWI waters: Cottonwood River; Plum, Sleepy Eye, Pell, and Clear Creeks, and five unnamed streams. There are no PWI lakes or MDNR-designated shallow lakes crossed by the Blue Segment right-of-way. One river and four creeks crossed by the Blue Segment are listed as impaired on the 303(d) list (Cottonwood River, Pell Creek, Plum Creek, Sleepy Eye Creek, and Clear Creek).[626]

---

[621] *Id.* at 96.
[622] Final EIS at 208 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[623] *Id.* at 210.
[624] *Id.* at 211.
[625] *Id.*
[626] *Id.*

535. **Red Segment**. The Red Segment has 19 waterbody crossings. These crossings include 12 intermittent and seven perennial streams. Of these streams, the following are PWI waters: Cottonwood River; Plum, Sleepy Eye, Pell, Lone Tree, and Clear Creeks; and seven unnamed streams. There are no PWI lakes or MDNR-designated shallow lakes crossed by the Red Segment right-of-way. One river and four creeks crossed by the Red Segment are listed as impaired on the 303(d) list (Cottonwood River, Pell Creek, Plum Creek, Lone Tree Creek, Sleepy Eye Creek, and Clear Creek).[627]

536. The MDNR requested review of an alternate crossing of the Cottonwood River (Cottonwood River Alternative Alignment on the Red Segment). Plum Creek's proposed the alignment in this location is routed along CSAH 5. MDNR indicated the low area adjacent to the Cottonwood River along CSAH 5 provides wildlife habitat and frequently floods due to rain and spring melting. The Cottonwood River Alternative Alignment shifts the Red Segment alignment west for approximately half a mile to avoid this area. Plum Creek has not secured voluntary easements along the Cottonwood Creek Alternative Alignment.[628]

537. The T-Line Project will have minor, mostly short-term, effects on surface water resources. Plum Creek will design the T-Line Project to minimize or avoid impacts to surface water resources to the extent feasible. The T-Line Project will be designed to span surface water resources and floodplains where practicable and to minimize the number of structures in surface water resources where these resources cannot be spanned.[629]

### c. Wetlands

538. In preparing the Route Permit Application, Plum Creek reviewed both the USFWS NWI and the MDNR PWI data bases to identify potential wetlands along the proposed routes.[630]

539. **Green Segment**. Of the total 99.2 acres of right-of-way that will be needed for the Green Segment, approximately 1.9 acres of NWI-mapped wetlands occur within the Green Segment right-of-way, including 0.5 acre of forested wetlands. None of the wetlands crossed by the Green Segment 150-foot right-of-way are PWI wetlands. No structures will be placed in wetlands along the Green Segment.[631]

540. **Yellow Segment**. Of the total 90.4 acres of right-of-way that will be needed for the Yellow Segment, approximately 1.2 acres of NWI-mapped wetlands occur within the Yellow Segment right-of-way, including 0.2 acre of forested wetlands. None of the

[627] *Id.*
[628] *Id.*
[629] Ex. 101 at 93 (RP Application).
[630] Final EIS at 213 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[631] Ex. 101 at 98 (RP Application).

wetlands crossed by the Yellow Segment 150-foot right-of-way are PWI wetlands. One structure would be placed in wetlands along the Yellow Segment.[632]

541. **Blue Segment**. Of the total 473.6 acres of right-of-way that will be needed for the Blue Segment, approximately 9.1 acres of NWI-mapped wetlands occur within the Blue Segment right-of-way, including 1.8 acres of forested wetlands. None of the wetlands crossed by the Blue Segment 150-foot right-of-way are PWI wetlands. Three structures will be placed in wetlands along the Blue Segment and those are isolated to wetlands associated with the Cottonwood River and its tributaries where wetland complexes are wider than the typical span length.[633]

542. **Red Segment**. Of the total 486.6 acres of right-of-way, 15.0 acres of NWI-mapped wetlands will occur within the Red Segment right-of-way, including 1.0 acre of forested wetlands. None of the wetlands crossed by the Red Segment 150-foot right-of-way are PWI wetlands. Plum Creek anticipates spanning most NWI-mapped wetlands within the 150-foot right-of-way. Ten structures would be placed in wetlands along the Red Segment and those are isolated to wetlands associated with the Cottonwood River and its tributaries where wetland complexes are wider than the typical span length.[634]

543. Wetlands impacted by construction will be restored as required by the USACE. Vegetation maintenance requirements under T-Lines prohibit establishment of trees. Existing trees that Plum Creek determines pose a hazard to T-Line operation must be removed throughout the right-of-way, including those in forested wetlands. Any mitigation required will be determined through consultation with USACE. Plum Creek will obtain all appropriate permits and approvals from the USACE, MDNR, LGUs, and watershed districts (if necessary) for any actions determined to occur in wetlands.[635]

### d. Floodplains

544. FEMA delineates floodplains and determines flood risks in areas susceptible to flooding. The base flood that FEMA uses, known as the 100-year flood, has a one percent chance of occurring each year.[636]

545. The Green and Yellow Segments do not cross floodplains. The Blue and Red Segments cross FEMA-designated 100-year floodplain areas in Redwood County. FEMA-designated 100-year floodplain areas are associated primarily with waterbodies along the Blue and Red Segments such as the Cottonwood River, Plum Creek, and Pell Creek. There are no 500-year floodplain areas crossed by the proposed routes.[637]

546. The T-Line Project may require T-Line structures to be placed within FEMA designated 100-year floodplain areas. Based on preliminary engineering design, no

[632] *Id.* at 99.
[633] *Id.*
[634] *Id.*
[635] *Id.* at 100.
[636] *Id.* at 97.
[637] *Id.*

structures will be placed in FEMA designated 100-year floodplains along the Green or Yellow Segments. The Blue Segment could potentially have 7 structures placed in FEMA designated 100-year floodplains; the Red Segment could potentially have 9 structures placed in floodplains. The placement of T-Line structures in floodplains is not anticipated to alter the flood storage capacity of the floodplain based on the minimal size of individual T-Line structures; and no mitigation measures are anticipated to be necessary.[638]

#### e. Groundwater

547. Impacts to surface water quantities could potentially impact groundwater quantities by reductions in surface water infiltration if surface waters are removed from the area by pumping or diversion to facilitate construction activities. Surface water removal in the form of pumping or diversion is anticipated to be limited in occurrence and duration and, when necessary, the pumped or diverted waters are still likely to infiltrate within the same general groundwater catchment area.[639]

548. Impacts to groundwater quality and quantity as a result of the T-Line project are anticipated to be minimal regardless of the route selected.[640]

### 3. Flora

549. The proposed T-Line segments cross both the Coteau Moraines and Minnesota River Prairie subsections of the North Central Glaciated Plains Section in the Prairie Parkland Province, as defined by the ECS of Minnesota. Agriculture is currently the dominant land use. This subsection is the heart of the Minnesota corn belt.[641]

550. The Green and Yellow Segments cross only the Coteau Moraines subsection, while the Blue and Red Segments cross similar portions of the Minnesota River Prairie and Coteau Moraines subsections.[642]

551. Impacts on flora for the segments will primarily be associated with cultivated crop areas.

552. Construction of the T-Line Project will result in short-term adverse impacts on existing vegetation, including localized physical disturbance and soil compaction. Construction activities, such as site preparation and installation of structures, are anticipated to impact approximately 0.1 to 0.5 acres of vegetation per structure. Construction activities involving establishment and use of access roads, staging, and stringing areas will also have short-term impacts on vegetation by concentrating surface disturbance and equipment use.[643]

---

[638] Final EIS at 213 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[639] *Id.* at 217.
[640] *Id.*
[641] *Id.* at 218.
[642] *Id.*
[643] Ex. 101 at 101 (RP Application).

553. Potential impacts to flora due to the project are anticipated to be minimal to moderate. Moderate impacts to plant communities will be isolated to riparian areas adjacent to the streams that flow through the Project Study Area. The majority of the proposed T-Line segments will be located over lands used for agricultural purposes, and the impacts will be minimal and temporary.[644]

### 4. Fauna

554. Plum Creek conducted a constraints analysis during the routing process to assess potential impacts to sensitive resources, including wildlife habitat. Where possible, Plum Creek designed the proposed segments to avoid these resources. Given that the majority of the land use along the proposed route segments is cultivated cropland, Plum Creek anticipates that the potential impacts on wildlife and wildlife habitat during construction and maintenance of the T-Line Project will be minimal. In addition, most impacts on wildlife habitat would be temporary with the exception of any necessary tree clearing and habitat conversion related to permanent T-Line Project features such as concrete foundations. Potential impacts on wildlife during construction will be primarily related to temporary disturbance and displacement; wildlife may be acclimated to human activity due to the agricultural activity within the T-Line Project Study Area.[645]

555. No MDNR-managed WMAs are within 1.0 mile of the Green and Yellow Segments. The nearest WMA to the Blue Segment is the Two Rivers WMA, which is located approximately 0.4 mile east of the Blue Segment's alignment. The nearest WMA to the Red Segment is Gales WMA; it is approximately 0.3 mile west of the Red Segment. There are no WMAs within the 150-foot rights-of-way of the Blue or Red Segments.[646]

556. Construction of the project may result in long-term adverse impacts on wildlife due to loss, conversion, or fragmentation of habitat. Plum Creek will permanently clear woody vegetation within the T-Line right-of-way. Wildlife species previously occupying forested or shrub communities in the right-of-way will be displaced in favor of species that prefer more open vegetation communities. Fragmentation could affect the survival of some species that depend on large areas of undisturbed habitat, and it could create barriers to daily movement. In addition, predators may pose a threat to animals that are forced out of cover to search for food, especially as the distance predators need to travel to penetrate large habitat areas decreases. Potential long-term impacts to fauna as a result of the project are anticipated to be minimal.[647]

[644] Final EIS at 218 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[645] Ex. 101 at 104 (RP Application).
[646] Final EIS at 220 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[647] *Id.* at 221.

## F. Effects on Rare and Unique Natural Resources

### 1. Federally Listed Species

557. There are three federally listed species that may occur in the vicinity of the proposed segments: Northern Long-Eared Bat, Dakota Skipper, and Prairie Bush Clover.[648] However, none of the proposed segments crosses prairie habitat for either Prairie Bush Clover or Dakota Skipper. Therefore, impacts to these two species are not anticipated.[649]

558. The USFWS published a Final ESA 4(d) rule for the Northern Long-Eared Bat on January 14, 2016. In the Final 4(d) rule, the agency limited prohibitions for the species to those that will protect the bat in White Nose Syndrome (WNS)-affected geographic areas during the most vulnerable stages in the species' life history—specifically, during hibernation, spring staging, fall swarming, and pup rearing. The T-Line Project's Application segments are located within the USFWS-designated WNS Zone. Per the Final 4(d) rule, within the WNS Zone, incidental take due to tree removal is prohibited as follows: (a) If it occurs within 0.25 miles of a documented hibernaculum; or (b) If it involves a documented maternity roost tree or other trees within 150 feet of the documented maternity roost tree during June or July. In addition, all take within known hibernacula is prohibited.[650]

559. Records of documented hibernacula and roost trees are maintained in the MDNR's NHIS. Based on a review of Northern Long-Eared Bat records, Plum Creek determined that there are no documented Northern Long-Eared Bat maternity roost trees within 150 feet or hibernacula within 0.25 mile of the proposed routes.[651]

### 2. State-Listed Species

560. Based on the Plum Creek's NHIS review, no occurrences of state-listed threatened or endangered species are recorded within one mile of the Application segments; however, there are two records of state species of special concern within one mile of the Red Segment—one record for the Forster's Tern and one record for Slender Milkvetch. Plum Creek does not anticipate future documented occurrences of state-listed species in the vicinity of the proposed routes given that the majority of the land use along the rights-of-way is cultivated crop land and developed areas. As such, impacts on state-listed plant species are not expected.[652]

561. The state's designation as a species of special concern for the Forster's Tern and Slender Milkvetch does not afford protections under the Minnesota Endangered Species statute, Minn. Stat. § 84.0895. The Forster's Tern record was observed 35 years

---

[648] *Id.* at 223.
[649] *Id.* at 226; Ex. 101 at 108 (RP Application).
[650] Ex. 101 at 108 (RP Application).
[651] *Id.*; Final EIS at 226 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[652] Ex. 101 at 108-09 (RP Application); Final EIS at 226-27 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

ago (1984) and is associated with the Westline WMA, approximately 0.75 miles from the Red Segment. The Slender Milkvetch record was observed about 20 years ago (1998) and is associated with the Gales 24 SOBS, approximately 0.05 mile from the Red Segment.[653]

562. Because both records were associated with designated natural-resource sites, Plum Creek anticipates that any additional occurrences of these species may also be associated with natural resource sites or other areas designated as having value as wildlife habitat. The Green and Yellow Segments rights-of-way do not cross any designated natural resource sites. The Blue Segment right-of-way does not cross any designated natural resource sites, with the exception of two SOBS ranked below the minimum threshold for statewide biodiversity significance. The Red Segment right-of-way crosses one SOBS, the Gales 24, where the Slender Milkvetch record was documented. Overall, impacts on state species of special concern are expected to be insignificant given the limited number of occurrences within a mile of the Application segments, the dates of these records, the limited number of natural resource sites, and the predominant land uses (agriculture and developed).[654]

### 3. Bald Eagles and Bald Eagle Nests

563. Bald eagles and bald eagle nests are protected by the federal Bald and Golden Eagle Protection Act which is administered and regulated by the USFWS.[655]

564. Plum Creek conducted aerial surveys (March 2018 and March 2019) for bald eagle nests within 10 miles of the Plum Creek Wind Farm boundary; the survey area for the Wind Farm completely overlaps with the Green and Yellow Segments and partially overlaps with the Blue and Red Segments. During the surveys, one active bald eagle nest was documented within one mile of the Blue Segment right-of-way; this nest is 0.95 mile east of the Blue Segment right-of-way along the Cottonwood River and was observed during both years of surveys. Two active bald eagle nests were documented within one mile of the Red Segment right-of-way. These nests were 0.95 mile and 0.6 mile from the Red Segment right-of-way along the Cottonwood River and observed during both years of surveys.[656]

565. During construction of the Project no bald eagles or bald eagle nests are anticipated to be impacted.[657]

566. MDNR generally requested that bird flight diverters be installed on sections of the proposed T-Line that will be near lakes, rivers, and other areas that may attract waterfowl. Plum Creek will coordinate with MDNR to determine how to best implement the request for bird flight diverter installation. Bird flight diverters are intended to make the T-Line more noticeable and identifiable to birds that are flying near the T-Line. Bird flight

[653] Ex. 101 at 109 (RP Application); Final EIS at 227 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[654] Ex. 101 at 109 (RP Application); Final EIS at 227 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[655] Final EIS at 227 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[656] *Id.* at 228.
[657] *Id.*

diverters have been successful in reducing the strike and electrocution of a variety of bird species in a number of different habitat types.[658]

### G. Application of Various Design Considerations

567. The Wind Farm is proposed to be up to 414 MW and the outlet provided by the T-Line Project allows for future expansion of generation in the area. This allowance appropriately capitalizes on the construction of the T-Line Project and minimizes environmental impacts. Additionally, the T-Line Project will be added to the local and regional transmission network, potentially providing a more robust outlet to a broader geographic area.[659]

### H. Use and Parallel of Existing Right-of-Way

568. Sharing right-of-way with existing infrastructure or paralleling existing rights-of-way minimizes fragmentation of the landscape and can minimize human and environmental impacts. The Commission considers the use and paralleling of existing rights-of-way in determining the most appropriate route for the project. To minimize impacts on the environment and affected landowners, Plum Creek looked for routing opportunities that will share existing rights-of-way along road and railroad rights-of-way and field and section lines.[660]

569. **Green Segment**. The Green Segment is approximately 5.5 miles long and connects Wind Farm Collector Substation 2 to Wind Farm Collector Substation 1. Approximately 59 percent of the Green Segment is co-located with roads; the other 41 percent of the Green Segment is located along property lines and field edges.[661]

570. **Yellow Segment**. The Yellow Segment is approximately 5.0 miles and connects Wind Farm Collector Substation 2 to Wind Farm Collector Substation 1. One hundred percent of the Yellow Segment is co-located with roads.[662]

571. **Blue Segment**. The Blue Segment is approximately 26.1 miles long and connects the Wind Farm Collector Substation 1 to the Switching Station located at the Brookings-Hampton 345 kV T-Line. Approximately 84 percent of the Blue Segment is co-located with roads; the other 14 percent of the Blue Segment is located along property lines and field edges.[663]

572. **Red Segment**. The Red Segment is approximately 26.8 miles long and connects Wind Farm Collector Substation 1 to the Switching Station at the Brookings-

[658] *Id.*
[659] Ex. 101 at 12 (RP Application).
[660] Final EIS at 231 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[661] *Id.*
[662] *Id.*
[663] *Id.* at 232.

Hampton 345 kV T-Line. Approximately 92 percent of the Red Segment parallels roads; the other eight percent (2.2 miles) follow property lines and/or field edges.[664]

### I. Electrical System Reliability

573. The North American Electric Reliability Corporation (NERC) has established mandatory reliability standards for the bulk power system in the United States. For new T-Lines, these standards require the utility to evaluate whether the grid will continue to operate adequately under various contingencies. Route permits issued by the Commission require permittees to comply with NERC standards.[665]

574. In developing the transmission project, Plum Creek evaluated different voltages, different end points, and different possible routes for the project. Plum Creek analyzed whether these routes created reliability concerns. Plum Creek asserts that the selection of the 345 kV line and the end point of the Switching Station at the Brookings-to-Hampton 345 kV HVTL will provide more integration of wind energy into MISO's transmission system and allow the proposed 345 kV line to preserve and enhance system reliability. Analysis of NERC transmission outages indicates that the 345 kV voltage is substantially more reliable than lower voltages, resulting in substantially fewer sustained and momentary outages than lower voltages.[666]

575. No adverse impacts to electric system reliability are anticipated.[667]

### J. Costs of Constructing, Operating, and Maintaining the Facility

576. Plum Creek estimates the total cost for the transmission project to be approximately $48 million (based on 2019 dollars), depending on the route selected. The variation in cost between routes is due to the length of the T-Line.[668]

577. Once the transmission project becomes operational, Plum Creek anticipates annual maintenance costs of approximately $500 per mile, based on similar T-Lines.[669]

### K. Adverse Human and Natural Environmental Effects that Cannot be Avoided

578. T-Lines are large infrastructure projects that have adverse human and environmental impacts. Even with mitigation strategies, such as prudent routing, there are adverse impact of the transmission project that cannot be avoided.[670]

---

[664] *Id.* at 232-33.
[665] *Id.* at 230.
[666] *Id.* at 230-31.
[667] *Id.* at 231.
[668] *Id.* at 141.
[669] *Id.* at 142; Ex. 101 at 28 (RP Application) at 28.
[670] Final EIS at 243 (Apr. 12, 2021) (eDocket No. 20214-172800-01).

579. The Project will have permanent aesthetic impacts, temporary construction-related impacts, permanent impacts on agriculture, and permanent impacts on the natural environment.[671]

580. These impacts are anticipated to occur for all segment alternatives and not to vary significantly among alternatives.[672]

### L. Irreversible and Irretrievable Commitments of Resources

581. The commitment of a resource is irreversible when it is impossible or very difficult to redirect that resource for a different future use. An irretrievable commitment refers to the use or consumption of a resource such that it is not recoverable for later use by future generations.[673]

582. The commitment of land for a T-Line right-of-way is likely an irreversible commitment. In general, lands in the rights-of-way for large infrastructure projects such as railroads, highways, and T-Lines remain committed to these projects for a relatively long period of time. Even in instances where a right-of-way is abandoned, the land within the right-of-way is typically repurposed for a different infrastructure use, such as a rails-to-trails program, and is not returned to a previous land use. This said, T-Line rights-of-way can be returned to a previous use (row crop, pasture) by the removal of structures and structure foundations to a depth that supports this use.[674]

583. There are few commitments of resources associated with the project that are irretrievable. These commitments include the steel, concrete, and hydrocarbon resources committed to the project, though it is possible that the steel could be recycled at some point in the future. Labor and fiscal resources required for the project are also irretrievable commitments.[675]

584. Irreversible and irretrievable commitments are anticipated to occur for all segment alternatives and not to vary significantly among alternatives.[676]

### M. Summary of Factors Analysis

585. As detailed in Appendix B of the Route Permit Application, the comparative potential impacts of the Green/Blue and Yellow/Red routes are similar overall; however, the Green/Blue route is slightly shorter than the Yellow/Red route and will cross a higher percentage of cultivated cropland, 55.0 percent vs. 52.1 percent, respectively. In addition, there are fewer previously recorded cultural resources within the Green/Blue route than the Yellow/Red route (one vs. two). The Green/Blue route will cross less FEMA-designated 100-year floodplain than the Yellow/Red route (14.0 acres vs. 18.4 acres) and based on preliminary design, fewer poles will be placed in wetlands along the Blue/Green

[671] *Id.* at 244.
[672] *Id.* at 243.
[673] *Id.* at 244.
[674] *Id.*
[675] *Id.*
[676] *Id.*

route than the Yellow/Red route (three vs. eleven). The Green/Blue route also has four fewer Public Waters Inventory watercourse crossings than the Yellow/Red route; 25.1 miles of the Green/Blue route follows existing road ROW, for 79.4%. The Green/Blue Segment also has potential for one less federal or state listed species than the Yellow/Red Segment.[677]

586. Blue Segment Alternative E is a shorter route segment along County State Aid Highway 10.[678] While the shorter route segment reduces impacts to cultivated crop land, it impacts one residence and lacks landowner support.[679] No commenter advocated for Blue Segment Alternative E.

587. The Cottonwood River Alternative Alignment for the Red Segment (Appendix D to the Final EIS) was requested by the MDNR and is approximately two miles in length and parallels property lines and roads. The proposed Red Segment in this area is approximately one mile in length and parallels the western side of CSAH 5 between 180th Street and CSAH 4.[680] The Cottonwood River Alternative Alignment is anticipated to create a number of incremental increases in impacts relative to the corresponding portion of the proposed Red Segment in this area. No commenter advocated for the Cottonwood River Alternative Alignment. The proponent, MDNR, recommended approval of the Blue Segment for this portion of the T-Line.[681]

588. Plum Creek has secured all necessary easements for the Green/Blue Segment. Plum Creek has secured 75 percent of the easements for the Red Segment as of the date of hearing.

589. No commenter advocated for the Red Segment.

590. Based on consideration of all routing factors, the Green/Blue Segment is the best route for the Project.

## XV. Notice

591. Minnesota statutes and rules require Applicant to provide certain notice to the public and local governments before and during the certificate of need, site permit, and route permit process.[682] Applicant provided notice to the public and local governments in satisfaction of these requirements.[683]

592. Minnesota statutes and rules also require DOC EERA and the Commission to provide certain notice to the public throughout the Route Permit process.[684] DOC EERA

[677] Ex. 123 at 13-14 (Burmeister Direct).
[678] Ex. 124 at Schedule 2 (Anderson Direct).
[679] *Id.*; Ex. 123 at 13 (Burmeister Direct).
[680] Final EIS at 131 (Apr. 12, 2021) (eDocket No. 20214-172800-01).
[681] Comment by MDNR (Mar. 10, 2021) (eDocket No. 20213-171766-01).
[682] Minn. Stat. § 216E.03, subds. 3a, 4; Minn. R. 7850.2100, subps. 2, 4 (2019).
[683] Ex. 103 (Plum Creek Compliance Filings, RP (Dec. 16, 2019)).
[684] Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.3700, subps. 2, 3, 6 (2019).

and the Commission provided the notice in compliance with all requirements of statute and rule.[685]

## XVI. Adequacy of the EIS

593. When more than one application is pending before the Commission related to a facility, the environmental reviews required for each application may be combined.[686] For this Project, the DOC EERA elected to combine the environmental reviews for the Certificate of Need and Route Permit Applications and to prepare an EIS.[687] The SP serves as the environmental document for analyzing environmental impacts related to the SP Application.[688]

594. Under Minn. R. 7850.2500, subp. 10, the Commission must determine the adequacy of the Final EIS. The Final EIS is adequate if it:

A. addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application;

B. provides responses to the timely substantive comments received during the draft environmental impact statement review process; and

C. was prepared in compliance with the procedures in parts 7850.1000 to 7850.5600.

595. The Commissioner of the Minnesota Department of Commerce issued a Final Scoping Decision for the Project on November 4, 2020.[689] DOC EERA issued the DEIS on January 11, 2021.[690]

596. An informational meeting was held on February 1, 2021, and the comment period remained open on the DEIS through February 12, 2021.[691] Written comments were received from the MDNR, the MPCA, the SHPO, Plum Creek, and one member of the public.[692] Approximately five members of the public offered oral comments as well.[693]

597. Generally, the comments suggested additional information be added or clarifications included in the Final EIS addressing: measures to minimize impacts to avian and bat species; local labor and economic benefits; soil erosion and stormwater impacts

[685] Ex. 129 (Notice of Public Information Meeting); Ex. 133 (Notice of Public and Evidentiary Hearings); Ex. 206 (DEIS Availability Notice); Ex. 207 (DEIS).
[686] Minn. R. 7849.1900, subp. 2; Minn. R 7850.2500.
[687] *See* Ex. 105 at 4 (Order Accepting Applications as Complete).
[688] Minn. R. 7854.0500, subp. 7.
[689] Ex. 205 (EIS Scoping Decision).
[690] Ex. 207 (DEIS).
[691] Ex. 129 (Notice of Public Information Meeting and Comment Period on DEIS).
[692] Written Comments Received on DEIS and Draft Site Permit (eDocket No. 20212-171205-01); Oral Comments Received on DEIS and Draft Site Permit (eDocket No. 20212-171206-02); Ex. 131 (Plum Creek Comments on DEIS).
[693] DEIS Meeting Tr. (Feb. 1, 2021).

and permitting; a Phase Ia archeological survey; NORAD's concerns regarding the Tyler MN Common Air Route Surveillance Radar; potential impacts to public roads; and impacts related to various Gen-Tie route alternatives.[694]

598. The Final EIS, reflecting responses to substantive comments on the DEIS, was filed on April 12, 2021.

599. Based on the record to date, the Final EIS adequately addresses the issues and alternatives identified in the EIS Scoping Decision, and the Commission and DOC EERA have followed the process required under Minn. R. 7850.100-.5600. The Final EIS responds to all substantive comments on the DEIS.

600. Based on the record, the Final EIS is adequate.

601. Any of the foregoing as Conclusions of Law that are more properly considered Findings of Fact are hereby adopted as such.

Based on these Findings of Fact, the Administrative Law Judge makes the following:

## CONCLUSIONS OF LAW

1. The Commission and the Administrative Law Judge have jurisdiction over the Certificate of Need, Site Permit and Route Permit sought by Plum Creek for the up-to-414 MW proposed Wind Farm and 345 kV T-Line pursuant to Minn. Stat. §§ 216B.243, 216E.02, 216F.04, and 14.57-.62 (2020).

2. The Commission accepted the Certificate of Need, Site Permit, and Route Permit Applications as substantially complete on January 30, 2020.[695]

3. Applicant, DOC EERA, and the Commission provided all notices required under Minnesota law and rule for these Certificate of Need, Site Permit and Route Permit proceedings.

4. DOC EERA has conducted an appropriate environmental analysis of the Project for purposes of the Certificate of Need, Site Permit, and Route Permit proceedings pursuant to Minn. R. 7849.1200 and 7850.2500. The Final EIS adequately addresses the issues and alternatives identified in the EIS Scoping Decision, and the Commission and DOC EERA have followed the process required under Minn. R. 7850.1000-.5600. The Final EIS responds to all substantive comments on the DEIS.

5. A public hearing was conducted by remote means in compliance with Minn. R. 1405.0200.–.2700, 1400.5010–.8400, chs. 7829, 7849, 7850, and 7854, and Minn. Emerg. Exec. Ord. 20-58 (May 15, 2020). The public received proper notice of the

[694] *Id.*
[695] Ex. 105 (Order Accepting Applications as Complete).

public hearing, and members of the public had an opportunity to speak at the hearing and to submit written comments.

6. Plum Creek and the Commission have substantially complied with the procedural requirements of Minn. Stat. Ch. 216B, Minn. Stat. ch. 216E, Minn. Stat. ch. 216F, and Minn. R. ch. 7829, 7849, 7850 and 7854.

7. Applicant has shown the probable result of denial of the Certificate of Need would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the people of Minnesota and neighboring states.

8. No party or person has demonstrated by a preponderance of the evidence that there is a more reasonable and prudent alternative to address the needs met by the Project.

9. A preponderance of the evidence on the record demonstrates that the Project will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.

10. The record does not demonstrate that the design, construction, or operation of the Project will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

11. No conditions on the Certificate of Need are necessary.

12. The Commission has the authority under Minn. Stat. § 216F.04(d) to place conditions in a LWECS site permit.

13. The Draft Site Permit contains a number of important mitigation measures and other reasonable conditions that adequately address the potential impacts of the Project on the human and natural environments.

14. It is unnecessary to amend the Draft Site Permit Condition 5.6.2 to allow phased construction.

15. It is unnecessary to impose a permit condition related to the Plum Creek Community Fund and the Commission may address Applicant's contributions to this fund through compliance filings.

16. Other modifications to the Draft Site Permit addressed in Section XII of this Recommendation are reasonable and should be implemented.

17. The evidence in the record demonstrates that the Blue/Green Segment satisfies the routing criteria set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. 7850.4100.

18. The Blue/Green Segment 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, Minn. Stat. ch. 116D (2020).

19. In accordance with Minn. Stat. § 216E.03, subd. 7(e), the Commission considered routing the T-Line on an existing high-voltage transmission route and the use of parallel existing highway right-of-way. On the Green Segment, 59 percent of its length follows roads. On the Blue Segment, 84 percent of its length follows roads. Where the Green/Blue Segments diverge from available existing road or T-Line right-of-way, the Applicant has provided adequate justifications, primarily landowner preference. The Administrative Law Judge concludes that the Green/Blue Segments maximize the use of existing highway right-of-way.

20. The evidence in the record demonstrates that the general Route Permit conditions are appropriate for the Project and no additional conditions on the Route Permit are necessary.

21. The record in this proceeding demonstrates that Plum Creek has satisfied the criteria for a Certificate of Need set forth in Minn. Stat. § 216B.243 and Minn. R. 7849.0120; a LWECS Site Permit as set forth in Minn. Stat. Ch. 216F, Minn. Stat. § 216E.03, and Minn. R. Ch. 7854; the Route Permit as set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. 7850.4100 and all other applicable legal requirements.

22. The Project, with the applicable permit conditions, does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act, Minn. Stat. Ch. 116B and/or the Minnesota Environmental Policy Act, Minn. Stat. Ch. 116D.

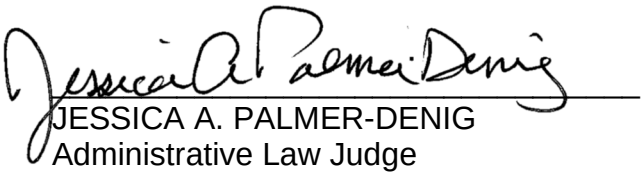
23. Any of the foregoing Conclusions of Law which are more properly designated as Findings of Fact are hereby adopted as such.

Therefore, based upon these Conclusions of Law, the Administrative Law Judge makes the following:

## RECOMMENDATION

Based on these Findings of Fact and Conclusions of Law, the Administrative Law Judge recommends that the Commission issue a certificate of need, site permit, and route permit to Plum Creek to construct and operate the up to 414 MW large wind energy conversion system and 345 kV T-line in Cottonwood, Murray, and Redwood Counties, Minnesota, with additional conditions related to the site permit as noted herein.

Dated: May 18, 2021



JESSICA A. PALMER-DENIG
Administrative Law Judge

## NOTICE

Notice is hereby given that exceptions to this Report, if any, by any party adversely affected must be filed under the time frames established in the Commission's rules of practice and procedure, Minn. R. 7829.2700, .3100 (2019), unless otherwise directed by the Commission. Exceptions should be specific and stated and numbered separately. Oral argument before a majority of the Commission will be permitted pursuant to Minn. R. 7829.2700, subp. 3. The Commission will make the final determination of the matter after the expiration of the period for filing exceptions, or after oral argument, if an oral argument is held.

The Commission may, at its own discretion, accept, modify, or reject the Administrative Law Judge's recommendations. The recommendations of the Administrative Law Judge have no legal effect unless expressly adopted by the Commission as its final order.

MINNESOTA
OFFICE OF
ADMINISTRATIVE
HEARINGS

PO Box 64620
Saint Paul, MN 55164-0620
mn.gov/oah

PH (651) 361-7900
TTY (651) 361-7878
FAX (651) 539-0310

May 18, 2021

See Attached Service List

**Re: In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties**

**In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties**

**In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties**

**OAH 71-2500-36664**
**OAH 71-2500-36665**
**OAH 71-2500-36666**
**MPUC IP-6997/CN-18-699**
**MPUC IP-6997/WS-18-700**
**MPUC IP-6997/TL-18-701**

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION** in the above-entitled matter.

If you have any questions, please contact me at (651) 361-7881, Anne.Laska@state.mn.us or via facsimile at (651) 539-0310.

Sincerely,

ANNE LASKA
Legal Assistant

Enclosure
cc: Docket Coordinator

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
PO BOX 64620
600 NORTH ROBERT STREET
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

| | |
|---|---|
| In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties<br><br>In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties<br><br>In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties | OAH 71-2500-36664<br>OAH 71-2500-36665<br>OAH 71-2500-36666<br>MPUC IP-6997/CN-18-699<br>MPUC IP-6997/WS-18-700<br>MPUC IP-6997/TL-18-701 |

Anne Laska certifies that on May 18, 2021, she served the true and correct **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

**Electronic Service Member(s)**

| Last Name | First Name | Email | Company Name | Delivery Method |
|---|---|---|---|---|
| Agrimonti | Lisa | lagrimonti@fredlaw.com | Fredrikson & Byron, P.A. | Electronic Service |
| Brusven | Christina | cbrusven@fredlaw.com | Fredrikson Byron | Electronic Service |
| Commerce Attorneys | Generic Notice | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | Electronic Service |
| Dornfeld | Richard | Richard.Dornfeld@ag.state.mn.us | Office of the Attorney General-DOC | Electronic Service |
| Ek | Scott | scott.ek@state.mn.us | Public Utilities Commission | Electronic Service |
| Eknes | Bret | bret.eknes@state.mn.us | Public Utilities Commission | Electronic Service |
| Ferguson | Sharon | sharon.ferguson@state.mn.us | Department of Commerce | Electronic Service |

| | | | | |
|---|---|---|---|---|
| Franco | Lucas | lfranco@liunagroc.com | LIUNA | Electronic Service |
| Hinderlie | Katherine | katherine.hinderlie@ag.state.mn.us | Office of the Attorney General-DOC | Electronic Service |
| Miltich | Louise | louise.miltich@state.mn.us | Department of Commerce | Electronic Service |
| Monson Miller | Jenny | jenny@nationalgridrenewables.com | National Grid Renewables | Electronic Service |
| Overland | Carol A. | overland@legalectric.org | Legalectric - Overland Law Office | Electronic Service |
| Palmer Denig | Jessica | jessica.palmer-Denig@state.mn.us | Office of Administrative Hearings | Electronic Service |
| Pranis | Kevin | kpranis@liunagroc.com | Laborers' District Council of MN and ND | Electronic Service |
| Residential Utilities Division | Generic Notice | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | Electronic Service |
| Seuffert | Will | Will.Seuffert@state.mn.us | Public Utilities Commission | Electronic Service |
| Shaddix Elling | Janet | jshaddix@janetshaddix.com | Shaddix And Associates | Electronic Service |
| Storm | William | bill.storm@state.mn.us | Department of Commerce | Electronic Service |
| Xiong | Cha | cha.xiong@ag.state.mn.us | Office of the Attorney General-DOC | Electronic Service |

## CERTIFICATE OF SERVICE

I, Chrishna Beard, hereby certify that I have this day, served a true and correct copy of the following document to all persons at the addresses indicated below or on the attached list by electronic filing, electronic mail, courier, interoffice mail or by depositing the same enveloped with postage paid in the United States mail at St. Paul, Minnesota.

**Minnesota Public Utilities Commission**
**ORDER GRANTING CERTIFICATE OF NEED AND ISSUING SITE PERMIT AND ROUTE PERMIT PLUM CREEK WIND FARM, LLC**

Docket Number **IP-6997/CN-18-699; IP-6997/WS-18-700; IP-6997/TL-18-701** Dated this 23rd day of September, 2021

/s/ Chrishna Beard

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Lisa | Agrimonti | lagrimonti@fredlaw.com | Fredrikson & Byron, P.A. | 200 South Sixth Street<br>Suite 4000<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Christina | Brusven | cbrusven@fredlaw.com | Fredrikson Byron | 200 S 6th St Ste 4000<br><br>Minneapolis,<br>MN<br>554021425 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1400<br><br>St. Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-699_Official CC Service List |
| Richard | Dornfeld | Richard.Dornfeld@ag.state.mn.us | Office of the Attorney General-DOC | Minnesota Attorney General's Office<br>445 Minnesota Street, Suite 1800<br>Saint Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Scott | Ek | scott.ek@state.mn.us | Public Utilities Commission | 121 7th Place East<br>Suite 350<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Bret | Eknes | bret.eknes@state.mn.us | Public Utilities Commission | Suite 350<br>121 7th Place East<br>St. Paul,<br>MN<br>551012147 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Sharon | Ferguson | sharon.ferguson@state.mn.us | Department of Commerce | 85 7th Place E Ste 280<br><br>Saint Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Lucas | Franco | lfranco@liunagroc.com | LIUNA | 81 Little Canada Rd E<br><br>Little Canada,<br>MN<br>55117 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Katherine | Hinderlie | katherine.hinderlie@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota St<br>Suite 1400<br>St. Paul,<br>MN<br>55101-2134 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Louise | Miltich | louise.miltich@state.mn.us | Department of Commerce | 85 7th Place East<br><br>Saint Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Jenny | Monson Miller | jenny@nationalgridrenewables.com | National Grid Renewables | 8400 Normandale Lake Blvd Ste 1200<br>Bloomington,<br>MN<br>55437 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Carol A. | Overland | overland@legalectric.org | Legalectric - Overland Law Office | 1110 West Avenue<br>Red Wing,<br>MN<br>55066 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Jessica | Palmer Denig | jessica.palmer-Denig@state.mn.us | Office of Administrative Hearings | 600 Robert St N<br>PO Box 64620<br>St. Paul,<br>MN<br>55164 | Electronic Service | Yes | OFF_SL_18-699_Official CC Service List |
| Kevin | Pranis | kpranis@liunagroc.com | Laborers' District Council of MN and ND | 81 E Little Canada Road<br>St. Paul,<br>Minnesota<br>55117 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Generic Notice | Residential Utilities Division | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower<br>445 Minnesota St<br>St. Paul,<br>MN<br>551012131 | Electronic Service | Yes | OFF_SL_18-699_Official CC Service List |
| Will | Seuffert | Will.Seuffert@state.mn.us | Public Utilities Commission | 121 7th Pl E Ste 350<br>Saint Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-699_Official CC Service List |
| Janet | Shaddix Elling | jshaddix@janetshaddix.com | Shaddix And Associates | 7400 Lyndale Ave S Ste 190<br>Richfield,<br>MN<br>55423 | Electronic Service | Yes | OFF_SL_18-699_Official CC Service List |
| William | Storm | bill.storm@state.mn.us | Department of Commerce | Room 500<br>85 7th Place East<br>St. Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |
| Cha | Xiong | cha.xiong@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota St.<br>Suite 1400<br>St. Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_18-699_Official CC Service List |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Lisa | Agrimonti | lagrimonti@fredlaw.com | Fredrikson & Byron, P.A. | 200 South Sixth Street<br>Suite 4000<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Christina | Brusven | cbrusven@fredlaw.com | Fredrikson Byron | 200 S 6th St Ste 4000<br><br>Minneapolis,<br>MN<br>554021425 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1400<br><br>St. Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-700_Official CC Service List |
| Sharon | Ferguson | sharon.ferguson@state.mn.us | Department of Commerce | 85 7th Place E Ste 280<br><br>Saint Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Lucas | Franco | lfranco@liunagroc.com | LIUNA | 81 Little Canada Rd E<br><br>Little Canada,<br>MN<br>55117 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Carol A. | Overland | overland@legalectric.org | Legalectric - Overland Law Office | 1110 West Avenue<br><br>Red Wing,<br>MN<br>55066 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Jessica | Palmer Denig | jessica.palmer-Denig@state.mn.us | Office of Administrative Hearings | 600 Robert St N<br>PO Box 64620<br>St. Paul,<br>MN<br>55164 | Electronic Service | Yes | OFF_SL_18-700_Official CC Service List |
| Kevin | Pranis | kpranis@liunagroc.com | Laborers' District Council of MN and ND | 81 E Little Canada Road<br><br>St. Paul,<br>Minnesota<br>55117 | Electronic Service | No | OFF_SL_18-700_Official CC Service List |
| Generic Notice | Residential Utilities Division | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower<br>445 Minnesota St<br>St. Paul,<br>MN<br>551012131 | Electronic Service | Yes | OFF_SL_18-700_Official CC Service List |
| Will | Seuffert | Will.Seuffert@state.mn.us | Public Utilities Commission | 121 7th Pl E Ste 350<br><br>Saint Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-700_Official CC Service List |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Janet | Shaddix Elling | jshaddix@janetshaddix.com | Shaddix And Associates | 7400 Lyndale Ave S Ste 190<br><br>Richfield,<br>MN<br>55423 | Electronic Service | Yes | OFF_SL_18-700_Official CC Service List |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Lisa | Agrimonti | lagrimonti@fredlaw.com | Fredrikson & Byron, P.A. | 200 South Sixth Street<br>Suite 4000<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_18-701_Official CC Service List |
| Christina | Brusven | cbrusven@fredlaw.com | Fredrikson Byron | 200 S 6th St Ste 4000<br><br>Minneapolis,<br>MN<br>554021425 | Electronic Service | No | OFF_SL_18-701_Official CC Service List |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1400<br><br>St. Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-701_Official CC Service List |
| Sharon | Ferguson | sharon.ferguson@state.mn.us | Department of Commerce | 85 7th Place E Ste 280<br><br>Saint Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_18-701_Official CC Service List |
| Lucas | Franco | lfranco@liunagroc.com | LIUNA | 81 Little Canada Rd E<br><br>Little Canada,<br>MN<br>55117 | Electronic Service | No | OFF_SL_18-701_Official CC Service List |
| Jessica | Palmer Denig | jessica.palmer-Denig@state.mn.us | Office of Administrative Hearings | 600 Robert St N<br>PO Box 64620<br>St. Paul,<br>MN<br>55164 | Electronic Service | Yes | OFF_SL_18-701_Official CC Service List |
| Kevin | Pranis | kpranis@liunagroc.com | Laborers' District Council of MN and ND | 81 E Little Canada Road<br><br>St. Paul,<br>Minnesota<br>55117 | Electronic Service | No | OFF_SL_18-701_Official CC Service List |
| Generic Notice | Residential Utilities Division | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower<br>445 Minnesota St<br>St. Paul,<br>MN<br>551012131 | Electronic Service | Yes | OFF_SL_18-701_Official CC Service List |
| Will | Seuffert | Will.Seuffert@state.mn.us | Public Utilities Commission | 121 7th Pl E Ste 350<br><br>Saint Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_18-701_Official CC Service List |
| Janet | Shaddix Elling | jshaddix@janetshaddix.com | Shaddix And Associates | 7400 Lyndale Ave S Ste 190<br><br>Richfield,<br>MN<br>55423 | Electronic Service | Yes | OFF_SL_18-701_Official CC Service List |