# Environmental Assessment Worksheet

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's (EQB) website at:
**http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm.**
The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
*Cumulative potential effects* can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
*Note to reviewers:* Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

## 1. Project Title: Scenic 69kV Transmission Line and Substation

## 2. Proposer: Great River Energy

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## 3. RGU: Department of Natural Resources

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## 4. Reason for EAW Preparation

Required:
☐ EIS Scoping
☒ Mandatory EAW

Discretionary:
☐ Citizen petition
☐ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s):

**4410.4300, Subpart 30, Natural Areas. For projects resulting in the permanent physical encroachment on lands within a national park, state park, wilderness area, state lands and waters within the boundaries of the Boundary Waters Canoe Area, scientific and natural area, or state trail corridor when the encroachment is inconsistent with laws applicable to or the management plan prepared for the recreational unit, the Minnesota Department of Natural Resources (DNR) or local government unit shall be the RGU.**

## 5. Project Location

County: **Itasca**
City/Township: **Big Fork**
PLS Location (¼, ¼, Section, Township, Range):

- **Sections 33-34, Township 61 N, Range 26 W;**
- **Sections 1-4, 9-12, Township 60 N, Range 26 W;**
- **Sections 6-8, 16-17, 21-22, 24-27, Township 60 N, Range 25 W;**
- **Section 30, Township 60 N, Range 24 W**

Watershed (81 major watershed scale): **77, Big Fork River in Rainy River Basin**
GPS Coordinates: **47.70639, -93.55902**
Tax Parcel Number: **Multiple, see table below.**

| PIN | PIN | PIN | PIN | PIN |
|---|---|---|---|---|
| 07-033-4401 | 38-004-3103 | 38-001-4302 | 60-016-2304 | 60-023-3400 |
| 07-034-3302 | 38-004-3101 | 38-001-4404 | 60-016-2303 | 60-023-4300 |
| 07-034-3201 | 38-004-3400 | 38-001-4403 | 60-016-3000 | 60-026-1200 |
| 07-034-3104 | 38-004-4301 | 38-001-4411 | 60-016-4000 | 60-026-1100 |
| 07-034-3301 | 38-009-1201 | 60-006-0000 | 60-021-1200 | 60-023-4400 |
| 07-034-3400 | 38-009-1100 | 60-006-4300 | 60-021-1100 | 60-025-2200 |
| 07-034-4200 | 38-004-4400 | 60-007-2100 | 60-021-1400 | 60-024-3300 |
| 07-034-4303 | 38-003-3300 | 60-007-1000 | 60-022-2300 | 60-024-3200 |
| 38-004-1200 | 38-003-3400 | 60-008-2000 | 60-022-3000 | 60-024-3401 |
| 38-004-1300 | 38-003-4300 | 60-008-3200 | 60-022-4200 | 60-024-4304 |
| 38-004-1600 | 38-003-4400 | 60-008-3100 | 60-022-4300 | 60-024-4402 |
| 38-004-1701 | 38-002-3300 | 60-008-3400 | 60-022-4400 | 60-025-1100 |
| 38-004-1700 | 38-002-3400 | 60-008-4303 | 60-027-1100 | 56-030-2101 |
| 38-004-4200 | 38-002-4300 | 60-008-4401 | 60-023-3300 | |
| 38-004-4201 | 38-002-4400 | 60-017-1102 | 60-026-2200 | |
| 38-004-4202 | 38-001-3000 | 60-016-2200 | 60-026-2100 | |

### *At a minimum, attach each of the following to the EAW:*

- County map showing the general location of the project;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.

Attached Figures

**Figure 1 - County Map**
**Figure 2 - U.S. Geological Survey Map**
**Figure 3 - Project Site Plan**
**Figure 4 - Project Site Plan for Scenic State Park**
**Figure 5 - Representative Photo of Transmission Line**
**Figure 6 – Western portion Soils and Water Table Depth**
**Figure 6a – Eastern portion Soils and Water Table Depth**
**Figure 6b – Soils Type Key**

## 6. Project Description:

### a. *Project Summary*

Provide the brief project summary to be published in the EQB Monitor (approximately 50 words).
**The Proposer, Great River Energy (GRE) proposes to construct a 69kV transmission line connecting to a new substation built by North Itasca Electric Cooperative, Inc. (NIECI). The substation is located northeast of Brush Shanty Lake and would address reliability and low voltage concerns in the Project area. The Project is designed to be a long-term solution, improving electric delivery and providing capacity for new demand and growth for North Itasca Electric Cooperative members.**

### b. *Complete Description*

Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion, include a description of the existing facility. Emphasize: 1)

construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

## *Project Overview*

**The Proposer would construct a new, 14-mile, 69kV electric transmission line on approximately 169 acres of state, federal, and private lands located in Itasca County (the County), see figures 3 and 4, *Project Site Plan*s. This includes lands that are located within Scenic State Park, George Washington State Forest and Chippewa National Forest. The proposed transmission line route would begin at the existing Bigfork substation on MN Highway 38 south of Bigfork. It would run east until it intersects Itasca County Highway 7 (Hwy 7), then turn south following MN Highway 7 for about 11 miles, deflecting east cross-country for two miles to County Road 340 and finally east along CR 340 for an additional mile connecting to the new NEICI substation site. The Project consists of the following major components:**

***Transmission Line***

- **193 Transmission Line Poles with concrete pier foundation.**
  - **175 round wood poles**
  - **12 manufactured laminate wood poles**
  - **5 steel poles with concrete pier foundations**
  - **1 weathering steel pole in Park**
- **Aluminum Conductor Wires with Steel Reinforcement**
- **Insulators**
- **Guy Wires and Anchors to stabilize some round wood poles**
- **Concrete pier foundations for 6 steel poles 6-8' feet diameter.**
- **Miscellaneous construction materials (bolts, galvanized culvert pipes, etc.)**

***Substation***

- **Class 5 sand and gravel mix**
- **Concrete pad**
- **Chain Link Security Fencing**
- **Grounding grid**
- **Prefabricated Meter Building**
- **Transformer**
- **Switches**
- **Breaker**
- **Buswork**
- **Highside**
- **Electrical apparatus**

**The transmission line would be constructed in a 100-foot-wide right of way (ROW), 50 feet each side of centerline, cleared of trees and vegetation. Poles would be placed 350 to 400 feet apart and will reach heights of 60 to 70 feet above ground. Guy wires and anchors would be required to stabilize some poles on directional changes and angles. The route would mostly follow existing corridors, limiting tree and vegetation clearing to one side.**

**The ROW through Scenic State Park would be approximately 1.6 miles in length and encompass 8.324 acres. Eighteen (18) of the total structures would be located in the Park. This would include 12 round wood poles, 1 guyed, round wood pole, 4 manufactured laminate wood poles, and 1 weathering steel pole on a concrete pier foundation, 6' in diameter. The proposer considered using something other than the weathering pole; however, alternatives would require guying. In the case of an un-guyed laminate pole, the base would be larger than the weathering pole. Overall, a weathering steel pole uses a smaller footprint than the alternatives and the aesthetics of a weathering steel pole is very similar to that of a**

**wood pole. The proposer will consult DNR Parks and Trails management regarding the poles that are being used.**
**To avoid placing poles in them, the wetlands would be spanned.**

**The Proposer has used the latest edition of the National Electric Safety Code (NESC) for the design of the transmission lines. The NESC is an Industry Standard used to cover provisions for safeguarding of persons from hazards arising from the installation, operation or maintenance of overhead electric supply lines. The Proposer or approved contractors would perform transmission line construction in compliance with local, state, NESC, IEEE, Occupational Safety and Health Administration (OSHA), and industry standards.**

### *Project Construction*

**Construction would comply with the latest industry standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, ROW widths, erecting power poles, and stringing of transmission line conductors.**

**There would be two staging areas. The main staging area is located at an abandoned 3-acre home site on Hwy 7, one mile south of Bigfork. This area would have a construction trailer and be used for storage of poles, wire, insulators and miscellaneous construction materials. The second staging area, southwest of Hwy 7 at the intersection of County Road 340, is a former staging area and borrow pit used to reconstruct Hwy 7 in 2010-11. This area would be used for pole storage.**

**Prior to construction, after permitting is complete, a meeting would be held with all work crews to review the project details. A restriction list and all project permits would be supplied to construction crew supervisors.**

**The proposer would limit the introduction of invasive species through the use of construction BMPs, such as checking and cleaning off construction vehicles to ensure new invasive vegetation is not brought onto the Project site. An inspection for invasive species would be conducted prior to use of staging and construction areas. If any invasive species are detected, they will be mitigated according to the protocols discussed in Item 13. In addition, the DNR operational procedures for the control of Invasive Species on DNR lands under Operational Order #113 would be distributed and discussed at the meeting. This Order as well as appropriate Forestry and PAT guidance would be followed on and adjacent to DNR lands and ecologically sensitive areas.**

**Construction is anticipated to occur during winter conditions in 2019/2020. If not possible, vegetation impacts would be minimized and mitigated by constructing during dry conditions or using mats for lowland areas. Access for Project construction would occur at existing approaches or off the highway edge. Temporary access matting would be used to reduce ground pressure and protect the environment. It is anticipated that winter construction would minimize access concerns.**

**Erosion and sediment control measures, such as perimeter control and culvert protection, would be installed prior to land alteration and construction activities and would continue for the duration of the Project. Erosion and sediment control would be consistently applied throughout the entire project area. The following control measures would be used as appropriate dependent on the type of disturbed area.**

- **Stake-free sediment log**
- **Silt fencing**
- **Staked sediment log**
- **Sediment log – ditch check with blanket**
- **Sediment log – ditch check**
- **Erosion control blanket**
- **Erosion control blanket – anchor trench**

***Pole Installation***

**The proposed transmission line would be constructed at grade elevations. Typical pole structures would require a drilled hole 10 to 15 feet deep and 2 to 3 feet in diameter for each pole. Pole structures in wet environments or angle structures may require additional foundation support, typically consisting of a concrete foundation or placement of the pole base inside a vertical galvanized steel culvert. Poles embedded in the ground may require the use of a 42-inch diameter corrugated metal pipe in areas where soft and loose soil conditions exist to ensure the excavated hole remains open during installation of the new pole. The proposer expects to have approximately 34 wetland structures plus 6 poor soils installed with a corrugated metal pipe (culvert). The corrugated metal pipe is filled with a Minnesota Department of Transportation approved Class 5 soil to stabilize the new pole. This number may change depending on soil-boring investigative results. Steel pole structures would require the use of a drilled pier concrete foundation. The drilled pier concrete foundation typically has a reveal height of one to two feet above the ground and the steel pole is placed on the top of the drilled pier concrete foundation.**

**Poles would be delivered to either the staked location or a project staging area. Poles delivered to an approved staked site would be placed on the ROW out of the clear zone of any adjacent roadways or designated pathways. The pole would be framed (attaching insulators and other hardware) while on the ground. It would then be lifted, placed and secured by a bucket truck or crane in an auger drilled hole backfilled with rock (non-steel poles) or a concrete foundation (steel poles).**

***Conductor Stringing***

**Once the structures are erected, conductors would be installed by establishing stringing setup areas within the ROW. The stringing setup areas would be established based on the wire length, approximately every two miles along the project route. Conductor stringing operations require brief access to each structure to secure the conductor wire to the insulators or to install shield wire clamps. Existing electric distribution circuit along the route would be buried. Temporary guard or clearance poles would be installed over roadways, railways, distribution or communication lines, or other obstructions to insure conductors do not obstruct traffic or contact existing energized conductors or other cables.**

***Testing and Energizing***

**Once all the conductors are strung, crews would check and test the new line to determine if the line specifications are correct. This may require brief access to each structure and the middle of the span. Once testing has shown specifications have been met, the line would be energized for operation. During this phase of the Project, the proposer would continue efforts to minimize and mitigate impacts to the environment.**

***Substation Construction***

**Portions of the substation were constructed prior to the need for determination of environmental review (see 6.f.). Remaining construction includes erection of the electrical apparatus (transformer, switches, breaker, buswork, highside, and prefabricated meter building).**

## *Anticipated Disturbance Project Construction*

**Tree removal would include approximately 45 acres in Chippewa National Forest, approximately 8 acres in Scenic State Park and approximately 19 acres in George Washington State Forest. In addition, approximately 24 acres of trees would be removed on private land and less than an acre on state land outside of George Washington State Forest and Scenic State Park.**

**Tree removal would be scheduled during frozen ground conditions to minimize soil disruption. Trees would be removed from the transmission line ROW preserving lower growing vegetation as much as possible. Removal is performed by a feller buncher which is a hydraulic harvester used in logging. It grabs the tree and cuts at ground level, strips the tree of branches, cuts it to length (100") and stacks. Removed trees are the landowner's property and are stacked for their use. If removal from the ROW is necessary, the trees would be loaded on trucks, removed and sold as stumpage. Branches and brush are mechanically shredded and left to decompose. The disturbed areas would be allowed to restore naturally.**

**Approximately 34 of the poles would be placed in wetlands. These poles would be placed in metal culvert pipes filled with clean rock.**

**Winter construction should eliminate most major soil disruptions. If an area is disturbed with ruts, repairs to smooth the area would be made and restoration and seeding would occur in the spring. The seeding would be monitored until fully restored to 70% coverage. The erosion controls would then be removed.**

### *Project Timeline*

**Construction is anticipated to occur during winter conditions in 2019/2020. If not possible, vegetation impacts would be minimized and mitigated by constructing during dry conditions or using mats for lowland areas. Project permitting and easement acquisition would occur in 2018/2019. Construction is scheduled to start in the fall of 2019 with tree removal from October 2019 to January 2020. Line installation from would take place December 2019 to May 2020. Project restoration during construction to August 2020. Energization of the project is anticipated in May 2020.**

**Construction activities including right of way clearing would generally occur during the normal workweek, Monday through Friday and only during daylight hours. It is possible that construction will occur on Saturdays as well due to construction crews traveling from out of the area. An extended workweek could allow them fewer weeks away from their main place of residence. Restoration would be ongoing during construction with a final walkthrough with Parks and Trails Management to review all disturbed areas after construction is complete.**

## *c. Project Magnitude*

| Project Component | Total Measurement |
|---|---|
| Total Project Acreage | 169 Acres (8.3 acres in Scenic State Park) |
| Linear Project Length | 14 Miles |
| Number and type of residential units | None |
| Commercial Building Area (square feet) | None |
| Industrial Building Area (square feet) | None |
| Institutional Building Area (square feet) | None |
| Other uses – ***NIECI Substation*** | 125,017 square feet |
| Structure height(s) | 60 to 70 feet |

### *d. Project Purpose*

Explain the project purpose; if a governmental unit will carry out the project, explain the need for the project and identify its beneficiaries.

**The proposed Project addresses the reliability of electric and low voltage concerns in NIECI's service area. This project would allow NIECI to provide quality electric service to the homes and businesses currently located beyond the capacity of the existing power sources, Big Fork and Jesse Lake Substations. The new Scenic Substation (Substation) would provide a long-term solution, improving electric delivery, proper voltages and adding capacity for new demand and growth in the NIECI service area. The 69kV transmission line would terminate at the new substation and not directly serve any customers. The voltage would be reduced to distribution levels for delivery to cooperative members within the service area.**

**An added benefit is that emergency electric services could be provided to members currently served by other substations. Under normal operation, the new substation would provide service to approximately 800 homes and cabins. In an emergency, it would be capable of providing electric service to 1,000 additional homes, commercial business, and cabins depending on the time of year and type of emergency.**

**Without this Project, NIECI would not be able to provide quality electrical service as defined by American National Standards Institute (ANSI). Presently, the system is operating outside the guidelines as defined by ANSI and would degrade as load grows in the area.**

### *e. Future Stages*

Are future stages of this development including development on any other property planned or likely to happen? **No**

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review. **Not applicable.**

### *f. Project stage:*

Is this project a subsequent stage of an earlier project? **Yes**
If yes, briefly describe the past development, timeline and any past environmental review.

**NIECI has implemented a temporary distribution fix project that uses portions of the substation that have been previously constructed. This includes a clearing of vegetation, grade to level, class 5 gravel added, concrete pad, grounding grid installed, electrical conduits, and substation fencing. The distribution fix project would involve placement of electrical infrastructure on the existing pad, as well as extensions of existing distribution line.**

## 7. Cover types: Estimate the acreage of the site with each of the following cover types before and after development.

| | Before | After | | Before | After |
|---|---|---|---|---|---|
| Wetlands | **1.19** | **25.05** | Cropland | **1.68** | **1.68** |
| Wetlands – Forested | **24.14** | **0.00** | Lawn/Landscaping | **1.26** | **1.26** |
| Open water/Streams | **0.46** | **0.46** | Impervious Surface | **2.60** | **2.60** |
| Upland Wooded/forest | **69.18** | **0.00** | Stormwater Pond | **0.00** | **0.00** |

| | Before | After | | Before | After |
|---|---|---|---|---|---|
| Brush/Grassland | **68.49** | **137.67** | Other (describe)<br>193 Utility Structures | **0.00** | **0.28** |
| | | | **TOTAL** | **169.00** | **169.00** |

# 8. Permits and Approvals Required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

| Unit of Government | Type of Application | Status |
|---|---|---|
| DNR | Water Crossing License | To be submitted for transmission line |
| DNR | Land Crossing License | To be submitted for transmission line |
| Federal Aviation Administration (FAA) | Determination of No Hazard | To be submitted for transmission line |
| Itasca County | Utility Road Permits | To be submitted for transmission line |
| Itasca County | WCA Permit | To be submitted for transmission line |
| MN Board of Water and Soil Resources (BWSR) | Wetland Conservation Act (WCA) Approval | To be submitted for transmission line |
| Minnesota Pollution Control Agency (MPCA) | National Pollutant Discharge Elimination System (NPDES)/ Construction Stormwater (CSW) General Permit | To be submitted for transmission line |
| MPCA | 401 Certification | To be submitted for transmission line |
| National Park Service | LAWCON Approval | Submitted for transmission line |
| Rural Utilities Service | Approval for Substation | Completed |
| U.S. Fish and Wildlife Service (USFWS) | Project concurrence (Lynx, Wolf, Bat) | Completed for transmission line and substation |
| US Forest Service | Land Crossing Permit | Submitted for transmission line |
| US Army Corps of Engineers (USACE) | General Permit | To be submitted for transmission line |

### Cumulative potential effects

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

# 9. Land Use

## *a. Description*

i. **Existing land.** Describe existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

**The Minnesota Geospatial Information Office, County Land Use webpage indicates the majority of the area located in Itasca County is forested with wetlands and water. Scattered farms and homesteads also exist in the area. The Project area's natural characteristics are gentle rolling landscape, upland and lowland forests, emergent and shrub wetlands, streams and shoreline. Natural vegetation is black spruce, quaking aspen, alder, red pine, white pine, and red oak.**

**Other land uses include farm fields, farmsteads, year-round homesteads, gentle winding state highway right-of-way, distribution power lines, snowmobile trails, off-highway-vehicle trails, logging roads, recreational/hunting cabins, shelterbelts/windbreaks, harvested and old growth forests, the Chippewa National Forest, the George Washington State Forest, and the Scenic State Park (see Figures 3 and 4).**

**US Department of Agriculture (USDA) Farm Service Agency in Baxter, MN reviewed the sections listed in the project area and reported they do not show active farms according to their records. In addition, a review of the soil survey published on the Natural Resources Conservation Service website indicates there are not prime or unique farmland properties listed at the project site.**

**The project is within the Big Fork River State Water Trail area (see Figures 3 and 4) used for water recreation; however, the Big Fork River is over 0.90 miles westerly of the project.**

**Due to its proximity to Scenic State Park, area residents commonly refer to Hwy 7 as "Scenic Hwy 7;" however, the Itasca County Highway department confirms there is no official state "scenic area" designation for Hwy 7 or the area surrounding Scenic State Park. The name, Scenic Hwy 7, is used for E911 purposes.**

**The Big Fork Municipal Airport is located in the Project area, approximately 3.4 miles north of the Big Fork Substation. No impacts to the airport are anticipated; however, because the proposed project is within five miles of an airport, an application for "Determination of No Hazard" must be submitted to the FAA.**

**The Project area would cross Scenic State Park, George Washington State Forest, Chippewa National Forest, State and County Tax forfeited lands and private property. The Itasca County Little Moose Trail for All Terrain Vehicle and Off Highway Motorcycle (ATV/OHM) use would be crossed twice at SW ¼ SE ¼, Section 34, T61N, R26W and SW ¼ SW ¼, Section 2, T60N, R26W. The Project would cross snowmobile grant-in-aid trails, Herb Brandstrom Trail 146 on the Scenic State Park and Marcell Trail 147, located along Hwy 7 at SW ¼ SE ¼, Section 34, T61N, R26W (see Figure 3). The transmission line would span the crossings; keeping guy wires off trails parallel the route.**

ii. **Plans.** Describe planned land use as identified in available comprehensive plan and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

**Plans relevant to the Project include Itasca County's Comprehensive Land Use Plan, Big Fork River Shoreland Management Plan, Scenic State Park Management Plan, the Chippewa National Forest Land and Resource Management Plan and the State Forest Resource Management Plan.**

*Itasca County*

**The County's 2020 Comprehensive Land Use Plan addresses land use under the following goals: cooperation, measurability, natural resources, housing and settlement patterns, agriculture, commercial/industrial development, recreation and transportation. Specific to natural resources, the plan has a goal to *"Promote land and water uses that result in sustainable use of natural***

***resources, balancing development and environmental commitment to conserve and enhance the natural beauty and resources of the County for this and the next one-thousand years."***

*Big Fork River*

**The 2005 Big Fork River Plan recommends development standards for utility crossings as follows: *"Underground installations are recommended where feasible and/or practical."* The line would be approximately 0.90 miles away from the river and would not cross the waterbody.**

*Scenic State Park*

**Scenic State Park is used extensively for family camping. Today there are 100 campsites, including 22 of the original 30 developed by the Civilian Conservation Corps (CCC) program. Popular activities at the Park including camping, hiking, canoeing, fishing, birding, and nature photography. Scenic State Park Management Plan proposed development states "Physical developments within Scenic State Park should be limited to those which are necessary for adequate management and appropriate use and enjoyment." Further, "To the highest practicable degree, location, design, and materials for facilities should be consistent with the objectives of preserving and enhancing the natural features of the Pine Moraine Landscape Region."**

**Scenic State Park has received Land and Water Conservation Fund (LAWCON) assistance in the past. Properties acquired or developed with LAWCON assistance are retained and used for public outdoor recreation. Conversion to a non-outdoor recreation use requires approval by the Department of Interior (DOI). An application for conversion has been submitted with supporting documentation, including, the property location and its replacement, fair market value, a LAWCON project amendment form; Description and Notification Form and a LAWCON Recreation Area Boundary map.**

*Chippewa Forest Plan*

**The Chippewa National Forest Land and Resource Management Plan (the Forest Plan) purpose is to *"Provide management direction to ensure that ecosystems are capable of providing a sustainable flow of beneficial goods and services to the public." Among other things, it specifically establishes guidelines and standards that establish "preferable action used to reach desired conditions and objectives."* According to the Forest Plan, *"Forest-wide management direction describes goals, desired conditions, objectives, standards, and guidelines for the major resource program areas on the Forest."***

*State Forest*

**All state forestlands on this project, including the George Washington State Forest are covered under the DNR, Division of Forestry Subsection Forest Resource Management Plan (SFRMP). SFRMPs are ten-year management plans intended to guide vegetation management on timber-producing state forest lands as well as other forest management activities. The project resides in the St. Louis Moraines and the Little-Vermilion Upland subsections of the North-4 Planning Unit. SFRMP considered natural resource related concerns that directly affect management of vegetation on lands administered by DNR.**

**No other plans were identified to be applicable to the area.**

iii. **Zoning**. Describe zoning including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

**The project area is zoned residential, farm and public lands. The proposed project area is located in areas zoned public and farm residential. Land use in the area is mainly forestry and public recreation. The county website does not show any special districts or overlays.**

**b.** ***Compatibility***

Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

**The biggest challenges for project compatibility are associated with Scenic State Park and Chippewa Forest. The proposed Project is inconsistent with these plan's goals or objectives regarding utilities and the recommendation that all overhead lines should be buried. According to the Scenic State Park Management Plan, under the heading of Utilities, the proposed Project is inconsistent as follows: *"Proposed Action: Replace All overhead lines within the park boundary with underground lines. Rationale: Overhead lines are unsightly."* Under the Scenic Resources category, the Chippewa Forest Plan states that *"Utility lines should be buried."* and under Special Use, the guidelines state *"Whenever, feasible, utility lines should be buried within existing road rights-of-way."***

**Forest Fragmentation is a compatibility issue the proposed Project faces with the Itasca County and State Forests Plan as follows: Itasca County aims to *"Minimize fragmentation of large contiguous tracts of natural resource lands."* The State Forest identifies fragmentation and loss of connectivity between habitats as issues described in the SFRMP. Additionally, loss of vegetation could affect the rate of hydrologic change, affecting aquatic resources on a watershed/sub watershed level.**

**The proposer has identified the following factors in reference to compatibility issues with the above listed plans.**

**While overhead lines in the Park are not aesthetically pleasing, underground transmission lines would result in other environmental impacts such as:**

- **A completely cleared ROW for the construction, operation, and maintenance of underground transmission lines**
- **Installation of a permanent access road capable of supporting the heavy construction equipment required for trenching activities, cable installation, maintenance and repair.**
- **Reduced soil moisture due to conductor cooling**

**Additionally, the proposer considered an alternative, above ground route; however, that alternative would create a new 100-foot ROW corridor versus an additional 50 feet on the existing road ROW. The proposed Project is more compatible with the Chippewa Forest Plan goal *"*Regarding Watershed Health, Riparian Areas, and Soil Resources, the Plan standards states, *"Where utility rights–of-way are constructed across wetlands, the crossings will be designed and maintained to preserve hydrologic and riparian function."***

**Objectives of the Forest Plan do include Special Uses to *"Generally provide for utility transmission corridors and communication sites."* and *"Emphasize the use of common corridors and multiple use sites when granting appropriate right-of-ways."***

**No other compatibility issues or compliance have been identified.**

**c.** ***Compatibility Mitigation***

Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

**The proposed 69 kV transmission line structures would have a narrow profile, approximately 8 feet wide, and designed to be less intrusive than other types of transmission structures (see Figure 5). The narrow profile structure refers to the transmission line having the insulators and wires attached to a single pole in a compact configuration, as opposed to a wide, two-pole structure in a horizontal configuration.**

**The transmission line ROW width is 100 feet, 50 feet on each side of the transmission centerline. The proposed route closely follows the previously cleared Hwy 7 ROW. By utilizing this corridor, there is a 50 percent reduction in clearing. The 50 feet outside of the Hwy 7 ROW would be cleared to provide for the transmission line's safe and reliable operation.**

**Transmission poles and supporting guy wires and anchors would not interfere with recreational resources. There are two designated trails along the route for hiking and snowmobiles, both are within the Scenic State Park and parallel the project for approximately 3,500 feet. These trails pass nine pole locations with a minimum horizontal separation of 20 feet. All transmission poles would be beyond the ditch and highway ROW. If guy wires and anchors are required, they are installed with high visibility markers from the ground to about 8 feet up the wire. The proposer will work with PAT Park Management to plan placement of the poles and newly planted vegetation would be used to minimize the visual impacts at the Park entry.**

**Tree removal in the corridor is located in previously logged regrowth areas. The proposer would avoid removal of old growth by routing the transmission line to the north side of Hwy 7. See section 6.b. for removal techniques. The State will determine compensation for trees removed on State owned property. Tree removal from private landowner's property would be negotiated directly with the landowner as part of a compensation offer.**

**Mitigation includes conversion of 8.324 acres and transfer of Land and Water Conservation (LAWCON) funds to another property near the park. Trails would not need to be adjusted and would remain on the proposed transmission ROW. Coordination between DNR and the National Park Service is needed to remove LAWCON restrictions.**

**Efforts to minimize incompatibility with the above-mentioned plans include:**

- **Place structures close to the ROW of highway, within limits of structure design and feasibility.**
- **Determine location of structures and other disturbed areas with input from landowners or land management agencies to minimize visual impacts.**
- **Limit, as practicable, the removal of vegetation and trees.**
- **Preserve the natural landscape during construction and operation to prevent any unnecessary damage of the natural surroundings near the work.**
- **Maintain setbacks from any identified sensitive plant species within the ROW; if avoidance is not possible, no work would occur until coordination with the appropriate agencies takes place.**
- **Limit work activities to the ROW where practical.**
- **Repair or replace fences, gates, and similar improvements removed or damaged during construction, maintenance or vegetation clearing.**

## 10. A Geology, soils, and topography/land forms.

**a. Geology:** Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

**The underlying bedrock geology of the project area is of the Precambrian (Late Archean) age, and includes gneiss, amphibolite, undifferentiated granite, and metamorphosed mafic to intermediate volcanic and sedimentary rocks. There are also iron formation, metasediments, and metamorphosed**

**felsic volcanic rocks. Glacial drift in this subsection ranges from 100 to 200 feet in depth. Lower Precambrian undivided granites, metavolcanics, and metasedimentary rocks underlie the glacial drift.**

**There are no identified sinkholes, shallow limestone, shallow aquifers, or karst features identified within the project area. There are no known mines in the project area.**

**b. Soils and Topography:** Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

**The Project area generally consists of soils and topography with 0-8 percent slopes made of poorly drained and well to excessively drained soils. These include silt loam and sand loams to sandy outwash over loams respectively. The primary soil types are Eagleview and Menahga soils, Cutaway loamy sand, Warba-Menahga Complex, and Baudette silt loam soils.**

**The Scenic State Park Management Plan inventory describes the soils in the Park. They range from well drained sands to poorly drained peats. The soil types specific to the transmission ROW are Braham, Warba and Blomford and are considered to have a slight erosion hazard. See Figures 6a and 6b.**

**Because the proposed transmission line would be constructed at grade elevations, grading is unnecessary. Expected impacts from the Project would be disturbance of soils during tree removal and pole placement. Prior to the start of construction, a Stormwater Pollution Prevention Plan (SWPPP) would be designed and an MPCA stormwater permit would need to be acquired. BMPs appropriate to the site conditions would be used. Restoration would happen when the work has been completed.**

**The known soil erosion hazard in the project area is slight (0.10) to moderately high (0.43). The segments of the project with the highest erosion potential would be the banks of the Rice River (NWSW, Section 34, T61N, R26N); south of Gale Brook (NW ¼ NE ¼ of Section 4, T60N, R26W); and Southeast of Scenic State Park between County Road 340 and Brush Shanty Lake. Constructing in winter and/or dry conditions would limit the impacts to these areas.**

**Measures will be taken by the proposer to address soil stabilization, prior to, during and after construction as follows:**

- **Using methods as described in section 6.b., the proposer would cover and stabilize disturbed areas where construction activities have temporarily or permanently ceased.**

- **Upon construction of the transmission line, bare areas would be seeded and mulched with a seed mixture certified as free of noxious or invasive weeds. Minnesota Department of Transportation (MnDOT) Native Seed Mixtures are proposed and shown below. The Proposer would also consult with a DNR PAT Park Manager and or a PAT Resource Specialist for approval on any seed mixes to be used on state park lands.**

| Native Seed Mix | MnDOT Seed Mixture | Seeding Rate (lbs/acre) |
|---|---|---|
| General Roadside | 36-311 | **33.5** |
| Riparian areas in Northeast MN | 34-361 | **31.5** |

| Native Seed Mix | MnDOT Seed Mixture | Seeding Rate (lbs/acre) |
|---|---|---|
| Ponds and Wet Areas in Northeast MN | 33-361 | **35.0** |
| Sandy/Dry Areas – Short Grasses | 35-221 | **36.5** |

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

# 11. Water Resources

## *a. Describe surface and groundwater features on or near the site in a.i and a.ii below.*

i. **Surface Water -** Describe lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

**Within the proposed project area, the DNR Public Waters Inventory (PWI) designates 28 public waters. The MPCA Impacted Waters View (IWAV) webpage identifies two waters as MPCA 303d impaired water, Coon Lake and Gale Brook. The transmission line ROW would not cross Coon Lake; however, it would cross Gale Brook twice. There are no other special designations listed for waters in the Project area.**

**MPCA's webpage "Surface Water Database" for the Project area indicates that Big Fork River is suitable for swimming and wading, with low bacteria levels throughout the open water season. Concentrations of Mercury in fish tissue exceed the water quality standard. Available data indicate a thriving community of fish and other aquatic organisms.**

**Gale Brook (Assessment Unit 09030006-547, east of Rice River) may not support a thriving community of fish and other aquatic organisms, as indicated by macroinvertebrate bioassessments.**

**Sandwick, Isaac, Cedar, Brush Shanty, and Anderson Lakes are suitable for swimming and wading, with good clarity and low algae levels throughout the open water season.**

**Coon Lake is suitable for swimming and wading, with good clarity and low algae levels throughout the open water season. However, concentrations of Mercury in fish tissue exceed the water quality standard.**

**Rice River, Lake of the Isles, and Gale Brook (Assessment Unit 09030006-643), west of Brush Shanty Lake) do not have enough data available to determine aquatic life, aquatic recreation, or aquatic consumption condition.**

**Tall mature growth vegetation within 50 feet of a PWI would be removed by hand. Lower growing vegetation would remain. All public waters would be spanned by an overhead transmission line. Water features identified within a mile of the project are as follows:**

| Water Feature Within One Mile of Project | Town | Range | On or adjacent to Project | Public Water Inventory |
|---|---|---|---|---|
| Big Fork River (BFR) | 61 | 26 | N | Y |
| Bustic Lake (713P) | 61 | 26 | N | Y |
| Rice River (RR) | 61 | 26 | Y | Y |
| Cemetery Lake (712P) | 61 | 26 | N | Y |
| Aspen Lake (690P) | 60 | 26 | N | Y |
| Gale Brook (GB) | 60 | 26 | Y | Y |
| Rice River | 60 | 26 | Y | Y |
| Rice Lake Bog (974P) | 60 | 26 | N | Y |
| Unnamed Stream | 60 | 26 | N | Y |
| Unnamed Stream | 60 | 26 | N | N |
| Laucho Lake (692P) | 60 | 26 | N | Y |
| Second Lake (693P) | 60 | 26 | N | Y |
| PWI Stream (Unnamed) | 60 | 26 | N | Y |
| Fox Farm Lake | 60 | 26 | N | N |
| Unnamed Wetland | 60 | 26 | N | N |
| Unnamed Wetland | 60 | 26 | Y | N |
| Unnamed Wetland | 60 | 26 | Y | N |
| Unnamed Water | 60 | 26 | N | N |
| Unnamed Water | 60 | 26 | N | N |
| Unnamed Water | 60 | 23 | N | N |
| Unnamed Water | 60 | 26 | N | N |
| Gale Brook PWI Connector Lake | 60 | 26 | Y | N |
| Isaac Lake (689P) | 60 | 26 | Y | Y |
| Cedar Lake (688P) | 60 | 26 | Y | Y |
| Tell Lake (505P) | 60 | 26 | N | Y |
| Coon Lake (524P) | 60 | 26 | N | Y |
| Sandwick Lake (524P) | 60 | 26 | Y | Y |
| Lake of the Isles (506P) | 60 | 26 | Y | Y |
| Marie Lake (507P) | 60 | 25 | N | Y |
| Unnamed Water | 60 | 26 | N | N |
| Unnamed Water | 60 | 26 | Y | N |
| Unnamed Water | 60 | 25 | Y | N |
| Unnamed Water | 60 | 25 | N | N |
| South Fork Coon Creek (SFCC) | 60 | 25 | N | Y |
| Unnamed Connector Lake (504P) | 60 | 25 | N | Y |
| Homestad Lake (508P) | 60 | 25 | N | Y |
| Erickson Lake (512P) | 60 | 25 | N | Y |
| Gale Lake (513P) | 60 | 25 | N | Y |
| Bass Lake (511P) | 60 | 25 | N | Y |
| Gale Brook PWI Connector Lake | 60 | 25 | Y | N |
| Unnamed PWI Stream (Perennial) | 60 | 25 | Y | Y |
| PWI Connector Lake | 60 | 25 | N | N |
| PWI Connector Lake | 60 | 25 | N | N |
| Bloom Lake (515P) | 60 | 25 | N | Y |
| Brush Shanty Lake (514P) | 60 | 25 | Y | Y |
| Anderson Lake (350P) | 60 | 25 | Y | Y |
| Little Antler Lake (306P) | 60 | 24 | N | Y |
| Unnamed Lake | 60 | 24 | N | N |

ii. **Groundwater –** Describe aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

1) **Based on soil descriptions, depth to groundwater varies on the project (see Figures 6a and 6b). Groundwater depth is closer to the surface on the east and west sides of the project with scattered pockets of upland areas. The central portion of the project has more depth to groundwater with scattered pockets of water features. Transmission ROW depth to water table varies as follows:**
    - **0 to 8 inches to water table - 33 percent**
    - **20 to 35 inches to water table - 14 percent**
    - **Greater than 80 inches to water table – 55 percent**

2) **The MDH webpage, "Minnesota Well Index – Map Version" identified fourteen private wells (see Figure 3) in the Project area. None of the wells is located in the proposed transmission ROW.**

## *b. Describe effects on water resources and measures to minimize/mitigate the effects in b.i. through b.iv. below.*

i. **Wastewater -** For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure. **Not applicable.**

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. **Not applicable.**

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges. **Not applicable.**

ii. **Stormwater** – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

**The proposed Project is located in the Big Fork River Watershed situated in the Rainy River Basin. Per the MPCA website, greater than 60 percent of the watershed is owned or managed by the state. The major river in this watershed, the Big Fork, starts at Dora Lake and winds its way north into the Rainy River. The Minnesota State Climatology Office website indicates in the last five years, the average annual rainfall for the Project area is 25.8 inches. Limited land uses for industry, housing, and roads have led to high water quality in the over 1.3 million acre Big Fork system.**

**The direction of water flow on the project would be similar after construction of the project because the grade and impervious surfaces would remain unchanged for the transmission line. The substation location would have a rock base considered impervious area; however, the property is graded to gradually move the water to reach a ditch culvert on the neighboring road ROW.**

**Approximately 93.32 acres (55 percent) of the transmission line ROW would be converted from forested to herbaceous or shrub vegetation (see Section 7). Therefore, future stormwater on the transmission ROW would infiltrate through a lower growing vegetation. Per BWSR, low growing**

**native vegetation would have multiple stems and deep root channels to aid in water infiltration, groundwater recharge, slope stabilization and flood attenuation. Per *"Plants for Stormwater Design, Shaw & Schmidt,"* vegetation in the Project area can encourage infiltration. Vegetation types in the Project area are as follows:**

- **The average root depth for native trees in the area can range from 12 to 60 inches; low growing shrubs can range from 12 to 36 inches in depth; and native herbaceous plants can range from 6 to 36 inches in depth.**

- **Trees can retain water from 3 to over 30 days with low to high tolerance to frequency of rainfall. Shrubs range from 2 to over 45 days with moderate to high frequency. While herbaceous plants hold water on average from 1 to 10 days with low to high tolerance to frequency of rainfall.**

**<u>Construction Phase</u>**
**Construction of the project would disturb greater than one acre of soil and as listed in section 8, and require an NPDES State Disposal System (SDS) CSW Permit. The Proposer must obtain a CSW permit from the MPCA, which requires the use of erosion prevention and sediment control BMPs such as silt fences, erosion logs, and prompt revegetation to minimize sediment from leaving the construction site.**

**As a part of the CSW permit application, the proposer would submit a SWPPP. The plan would identify all potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges from the construction site. The proposer will commit to erosion prevention and sediment control BMPs to control the discharge of sediment and/or other pollutants from the Project. The plan would include common structural and non-structural BMPs such as:**

- **Stake and mark the construction areas with flags and other equivalent markers, restricting work to the area.**
- **Avoid and minimize the disturbance of soils at all times, not disturbing an area until it is necessary for construction.**
- **Limit grading to substation.**
- **Maintain shortest possible timeframe for construction.**
- **Place silt fence around staging areas.**
- **Install and maintain downslope and sideslope perimeter controls until all upstream areas reach final stabilization.**
- **Install and maintain access roads with rock, mulch or other approved material to remove sediment on vehicle tires.**
- **Utilize woody vegetation that has been removed from the Project area and chipped as a thin cover over the transmission ROW (See Section 13.b.).**
- **Schedule construction in areas with steep slopes, fragile soils and high-water table during frozen or dry conditions (See Section 10.6). Use mats in lowland areas, if frozen conditions are not available.**
- **Schedule construction activities to limit impact from seasonal climate changes or weather events.**
- **Control dust during the project by limiting construction traffic; sequence disturbances, dampen exposed soils; gravel construction entrances/access roads; and preserve vegetation as much as possible.**
- **Cover or stabilize disturbed areas as soon as possible. Temporary seeding where construction activities have temporarily or permanently ceased.**
- **Once the line is constructed, bare areas are seeded and mulched with a native seed mixture or plants certified as free of noxious or invasive weeds (see Section 10.b).**

**<u>Operation Phase</u>**

**Post-construction maintenance for the substation would include mowing and spraying for weeds. Substation property is graded to gradually move the water to reach a ditch culvert on the neighboring road ROW. This would not change.**

**DNR operational procedures for the control of Invasive Species on DNR lands under Operational Order #113 would be used during maintenance for the transmission line. This Order as well as appropriate Forestry and PAT guidance would be followed on and adjacent to DNR lands and ecologically sensitive areas. This may include spot spraying for tall trees coming back in the ROW, spraying for invasive species and maintaining native vegetation to assist in Stormwater management.**

iii. **Water Appropriation** – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

**Not applicable. Dewatering would be not conducted on the project. In areas where wet soil conditions exist, the location would be accessed during frozen conditions or by the use of matting. The installation of structures would be performed at the water level present at the time of construction.**

iv. **Surface Waters**

a) *Wetlands* - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

**It is anticipated that the proposed Project would result in both temporary and permanent effects to wetlands in the Project area. Temporary impacts would be disturbance of vegetation and placement of mats to access structure locations and string conductor.**

**Permanent impacts would be the conversion of woody wetland types to herbaceous types and the placement of 34 structures in wetlands. The type of wetland conversion would be 12.1 acres of Palustrine Scrub Shrub (PSS) and 10.3 acres of Palustrine Forested (PFO) types to an herbaceous Palustrine Emergent (PEM) type. In addition, 0.01 acres of forested wetland and 0.03 acres of non-forested wetland would be lost for pole placement.**

**The proposer commits to minimizing vegetation impacts by constructing during dry or frozen conditions and or using mats. The mats and pressure equipment aid in less disruption of the vegetation and soils. Disturbed habitat would be restored with a native seed mix free of invasive species as discussed in section 10.b. Wetlands would be avoided as much as possible and the overhead transmission line would span the wetland in the park to avoid impact.**

**To minimize discharge of sediments and other pollutants into wetlands, the prosper commits to avoid wetlands by rerouting access. If necessary to access wetlands, construction would take place on frozen ground. Where wetland access is required during non-frozen ground conditions, construction mats and/or low-pressure equipment would be used.**

**No draining, filling, permanent inundation and dredging would be a part of the proposed Project. Fill would involve class 5 rock at the pole locations, used as stabilaization. Direct impacts would result from tree removal and access to set poles and stringing of the conductor. Indirect impacts would be increased light and temperature to the transmission right-of-way. A USACE general permit and local WCA approval would need to be acquired prior to construction.**

**The following steps would be taken to minimize impacts to the wetlands:**

- **Install erosion controls prior to beginning construction and maintain throughout the duration of construction and following until stabilization.**
- **Design erosion controls for site characteristics (e.g. erosion control measures installed next to a water body run parallel to the contours.)**
- **Restore and stabilize all disturbed areas as soon as possible during and after construction.**
- **Revegetate all disturbed areas using state approved certified weed-free native seed mixes and mulches as described in 10.b.**
- **Routinely inspect and stabilize erosion that may occur.**
- **Keep excavated materials away from the public waters to avoid redeposit into the public water by reasonably expected high water or storm run-off.**

**Compensatory wetland mitigation would be needed for the permanent fill and wetland conversion. Corps approved credits, purchased from the BWSR website, would be obtained from a minor or major watershed closest to the project.**

b) *Other surface waters*- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

**The project would not involve any physical modifications to surface waters. Tall mature growth vegetation within 50 feet of the waterbodies would be removed by hand. Sandwick lakeshore would have vegetation removed along Hwy 7; however, a 50 foot width of the vegetation closest to the shoreline would remain.**

**The following PWI waters would be crossed by the transmission line ROW:**

- **Rice River - NW ¼ SW ¼ of Section 34, T61N, R61W**
- **Gale Brook Crossing 1 – NW ¼ NE ¼ of Section 4, T60N, R26W**
- **Gale Brook Crossing 2 – SW ¼ SW ¼ of Section 1, T60N, R26W**
- **Gale Brook Crossing 3 – SW ¼ SE ¼ of Section 22, T60N, R25W**
- **Unnamed Stream – NE ¼ NE ¼ of Section 27, T60N, R25W**

**The transmission line would not be cross P506 Lake of the Isles – NW ¼ NE ¼ of Section 7, T60N, R25W; however, it would be within 50 feet of the ROW. Vegetation buffers would be protected**

**around these waterbodies. BMPs as described in section 13.c. would be used prior to construction and for the duration until stabilized, on adjacent upland areas to protect surface waters on the project.**

## 12. Contamination/Hazardous Materials/Wastes

**a. Pre-project site conditions:** Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

**A review of MPCA's "What's in My Neighborhood" website, shows no active sites within the transmission ROW.**

**b. Project related generation/storage of solid wastes:** Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

**The proposer estimates that 10 cubic yards of solid waste (e.g., concrete, packing materials, etc.) would be generated each week during construction. The solid waste would be recycled, reused or disposed of at a licensed landfill. Storage of materials would be kept in mobile construction trailers and vehicles on site. The Proposer's operation of the project would not generate solid waste.**

**c. Project related use/storage of hazardous materials:** Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

**The Project would have minimal quantities (< 1 cubic yard) of chemical/hazardous materials on site. Materials used with construction equipment on the site would be kept inside mobile construction trailers and vehicles on site. The proposer would maintain a Construction Spill Prevention Control and Countermeasure Plan to address storage and spill prevention issues.**

**d. Project related generation/storage of hazardous wastes:** Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

**This project would not generate hazardous waste; however, the substation would have a large quantity of mineral oil in the transformer. The EPA requires a Spill Prevention Control and Countermeasures (SPCC) Plan for the substation (40 CFR 112). The plan covers the prevention, preparedness for, and response to oil discharges at the substation. The SPCC Plan would be developed and in place prior to the transformer being placed on the property.**

## 13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features)

**a. Resources:** Describe fish and wildlife resources as well as habitats and vegetation on or near the site.

*General Landscape Characteristics*

**The proposed project site is located within the Ecological Classification System (ECS) of the Laurentian Mixed Forest (LMF) Province. The Province is characterized by broad areas of conifer forest, mixed hardwood and conifer forests, and conifer bogs and swamps. The landscape ranges from rugged lake-dotted terrain with thin glacial deposits over bedrock, to hummocky or undulating plains with deep glacial drift, to large, flat, poorly drained peatlands. The overall pattern of vegetation change across the Province is from warm and dry habitats in the southwest to cooler and moister ones in the northeast.**

**The ECS subsections of the proposed Project are the Littlefork Vermillion Uplands and the St. Louis Moraines. This subsection is transitional between extensive peatlands to the west and bedrock controlled landscape to the east. Topographic relief is less than 50 feet on most of the lake plain, becoming greater to the east in the transition zone. Quaking aspen is the most common species of tree in this subsection. Aspen is probably the best developed forest type on the uplands. Forestry and tourism are the major land uses.**

**Native plant communities along the proposed transmission line ROW are mostly pioneer hardwoods with spruce and fir inclusions. In addition, there is a small cluster of northern hardwood forest and a small pine grove with bottomland hardwood near the west boundary of the park. Impact to these communities would be the removal of trees (8.324 acres) for the installation and operation of the transmission line.**

*Fish and Wildlife Resources*

**The Project is proposed to traverse public lands that provide for the conservation of wildlife habitations, the promotion of outdoor recreation and the production of wood products. The forest and wetlands provide moderate to highly valuable habitat for wildlife. Typical mammals common to the Project area include white-tailed deer, raccoon, skunk, beaver, coyote, red fox, weasels, snowshoe hare, black bear bobcat, porcupine, and smaller mammals like bats and squirrels. Bird species include great gray owls, spruce grouse, warblers, chickadees, and a variety of waterfowl. Other species include osprey, bald eagle, common loon, northern goshawk and various amphibians such as frogs and turtles.**

**b. Rare Features:** Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB _____) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

**The Minnesota Natural Heritage Information System (NHIS) database was queried by Natural Heritage Review staff to identify rare species or other significant natural features that exist within a one mile radius of the Project area (see Attachment 1).**

*Sites of Biodiversity Significance*

**The Minnesota Biological Survey (MBS) assigns biodiversity significance ranks to each survey site at the conclusion of work in a geographic region. These ranks are used to communicate the statewide native biological diversity importance of each site to natural resource managers, state and local officials, and the public. The intent of the rankings is to inform and guide future land management and resource conservation efforts.**

**The project area crosses a site of *Outstanding Biodiversity Significance* and a site of Moderate Biodiversity Significance in the Project area. Sites ranked as *Outstanding* contain the best occurrences of the rarest**

**species, the most outstanding examples of the rarest native plant communities and/or the largest, intact functional landscapes present in the state. Sites ranked as *Moderate* contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes have a strong potential for recovery. These particular Sites contain several high quality native plant communities.**

### *DNR Rare Species Guide*

**The DNR Rare Species Guide identifies native plant communities, mussel and fish species, birds, and other species of concern found in the Project area as follows:**

#### Chippewa National Forest

- **White Pine Forest, a mature stand of trees over 100 years old, located 150 feet from the transmission line.**

#### Scenic State Park

- **White Pine Forest, a mature stand of trees over 200 years, located approximately 0.35 miles from the transmission line.**
- **Three-Stamened Waterwort. Located approximately 0.75 mile from the transmission line, this species has been under considerable pressure from agricultural activities and rock quarrying, and has been in a significant decline. The remainder of the known populations are in clear soft-water lakes in the north central and northeastern portion of the state, LMF. This Waterwort is an extremely rare species designated as a species of special concern.**
- **Spiny Hornwort occurs in soft-water (low alkalinity) lakes of northern Minnesota. It is found on softer substrates and can grow in water depths up to three meters. These species are not widespread in Minnesota but their presence is indicative of relatively undisturbed native plant beds. The line would avoid the population.**

**State-listed mussel and fish species documented in the Rice River include**

- **Creek Heelsplitter is a mussel once widespread and abundant in the Mississippi drainage north of St. Anthony Falls in Minnesota. However, sampling in the 1980s and 90s concludes the species was once more widely distributed than it is at present. Additionally, no recruitment was evident at any of their survey sites.**

- **Fluted-shell is a mussel relatively widespread but uncommon species in Minnesota, occurring in the Red, Minnesota, St. Croix and Mississippi (below St. Anthony Falls) river drainages. The species' perilously low numbers make it vulnerable to catastrophic events.**

- **Black Sandshell was once common in all but the smallest rivers in Minnesota. However, the St. Croix, Cloquet and Whiteface rivers appear to be the last strongholds for this species in the state.**

- **Northern Brook Lamprey populations found in Minnesota represent the northwestern edge of the species' range, which is centered in the Upper Midwest. This species is at some risk from reduced water quality due to land use practices and from lampricide treatments of parasitic Sea Lamprey.**

**State-listed birds of special concern that may nest in the area include Bald Eagles and Northern Goshawk. Both species are federally protected under the Migratory Bird Treaty Act and Bald Eagles under the Bald and Golden Eagle Protection Act. Both acts prohibit killing, selling, or otherwise harming these birds, their nests, or eggs. Northern Goshawks are found year-round in the region. The birds prefer contiguous areas of mature and older forest for nesting and foraging and large home ranges per mated pair. The availability of large patches of mature and older forest has declined regionally due to fragmented land ownership and the fragmentation of historically large contiguous forest stands due to past and current forest management practices.**

**The US Fish and Wildlife Service (USFWS) identifies the Canada lynx, Gray wolf and the Northern Long Eared Bat as federally listed, threatened and endangered species located in the project area. The proposer contacted USFWS regarding the proposed transmission line route and any concerns regarding the listed species. USFWS indicated they do not have any concerns with the project route.**

**c. Adverse Effects:** Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

**The project area would encompass 169 acres of state, federal, and private lands. Wildlife and their habitats would be affected by activities related to construction and the transmission lines post-construction. Vegetation removal, including clearing of woody shrubs and trees would be required for the transmission line. The proposed project could temporarily displace wildlife within the immediate area of construction. Temporary impacts to fauna would take place most intensively at the structure locations (approximately 17 acres for entire project) where the boring and installation of the pole would take place. Vegetation impacts are minimized and mitigated by constructing during dry or frozen conditions; or using mats. Disturbed habitat is restored to previous conditions with a native seed mix free of invasive species as per section 6.b.**

**Raptors, waterfowl, and other bird species may be affected by the construction and placement of the transmission line. Avian collisions are a possibility after the completion of the transmission line. An appropriate line-marking plan near these feeding and resting areas can reduce collision risk. Electrocution of large birds, such as raptors, is a concern, but generally related to distribution lines. The transmission line design standards provide adequate spacing to eliminate the risk of raptor electrocution. The Northern Goshawk and Bald Eagles may nest in the area. Any tree removal associated with the proposed project, would be inspected for nests prior to being cut down. In the case where nests are found, USFWS conservation measures, management guidelines, and permitting would be followed.**

**The Project is not expected to adversely affect aquatic life, as the overhead transmission line would span the waters. Multiple state-listed mussel and fish species have been documented in the Rice River. These species are particularly vulnerable to deterioration in water quality, especially increased siltation. Disturbance to stream would be avoided by spanning the river. Also, effective erosion and sediment control practices near all waters would be implemented and maintained prior to, during, after and through stabilization of the Project. This includes things such as keeping a vegetative buffer within 50 feet of the waterbodies.**

**Rare species identified within a mile of the project include White Pine Forest located of the Project in Section 11, T60N, R26W and Spiny Hornwort, an aquatic plant on Lake of Isles. The White Pine Forest is located outside of the Transmission Row and no structures or equipment would be placed south of the highway, where the Spiny Hornwort is located.**

**A portion of the proposed project is within areas the Minnesota Biological Survey (MBS) preliminarily identified a Site of Outstanding and a Site of Moderate Biodiversity Significance. Activities in road ROW can negatively affect adjacent native plant communities, especially through the introduction of invasive plant species.**

**The Project is anticipated to have no effect on the Canada lynx, gray wolf. The Canada lynx and gray wolf are long-ranging mammals with large home ranges. Although both species may be present in the area, the project would not impact suitable habitat or individuals of either species.**

**After construction, most future maintenance would be foot traffic to gain access to maintain the structures and remove tall growing tree species on the ROW. Large equipment is not expected unless in emergency situations. No additional permanent impacts are expected.**

**d. Mitigation Measures:** Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.
**The project area has numerous native plant communities, see Section 13.a and b. The following measures would be taken during construction and operation of the project.**

*Measures for Invasive Species*

**The proposer would limit the introduction of invasive species through the use of construction BMPs, such as checking and cleaning off construction vehicles to ensure new invasive vegetation is not brought onto the Project site. An inspection for invasive species would be conducted prior to use of staging and construction areas. If any invasive species are detected, they will be mitigated according to the protocols discussed in below. In addition, the DNR operational procedures for the control of Invasive Species on DNR lands under Operational Order #113 would be distributed and discussed at the meeting. This Order as well as appropriate Forestry and PAT guidance would be followed on and adjacent to DNR lands and ecologically sensitive areas.**

**The proposer would keep parking, staging areas and travel routes out of known infested sites. Also, start work at the site with the fewest number of invasive plants, leaving the most heavily infested sites to last.**

*Measures for Erosion Control*

- **Install erosion controls prior to commencement of construction and maintain until stabilization has occurred**
- **Design erosion controls for site characteristics, e.g. erosion control measures installed next to a water body run parallel to the contours**
- **Retain original contours and elevations and stabilize all disturbed areas as soon as possible**
- **Routinely inspect and stabilize erosion that may occur**
- **Revegetate all disturbed areas using state approved certified weed-free seed mixes and mulches as mentioned in section 6.b.**
- **Keep excavated materials away from the public waters; so, materials cannot be redeposited into the public water by reasonably expected high water or storm run-off**
- **Implement and maintain effective erosion and sediment control practices near water bodies. To further protect aquatic species, span water bodies with an overhead line.**
- **Keep erosion control consistent throughout the entire project in all disturbed areas, including areas of vegetation removal and traffic areas.**

*Measures for MBS Sites and Sensitive Ecological Resources:*

**Actions to minimize disturbance may include, but are not limited to, the following:**

- **Confine construction activities to the existing road rights-of-way when crossing the MBS Sites**
- **As much as possible, operate within already-disturbed areas**
- **Minimize vehicular disturbance in the area by allowing only vehicles necessary for the proposed work.**
- **Do not park equipment or stockpile supplies in the area**
- **Do not place spoil within MBS Sites or other sensitive areas**
- **Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species**
- **If possible, conduct the work under frozen ground and/or dry conditions**
- **Use effective erosion prevention and sediment control measures**

- **Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible using the seed mixes mentioned in section 6.b.; and Use only weed-free mulches, topsoils, and seed mixes.**

*Avoid or Limit Impact to Native Plant Communities:*

**The transmission line ROW would avoid the designated old-growth forests in the area; however, it is adjacent to these areas. Management of the ROW such as prevention, control and removal of exotic species would aid in maintaining the native habitat in the area.**

**Two native plant communities are close to the project (White Pine in Section 11, T60N, R26W; and White Pine-Red Pine in Section 8, T60N, R25W). The transmission line avoids the white pine community by being on the opposite side of the road. White-Red Pine community appears to have enough distance (0.35 mile) from the project.**

*Avoid or Limit Impacts to Wetlands*

**Wetlands would be avoided as much as possible. The overhead transmission line would span the wetland on the park to avoid impact. Sensitive areas would be accessed during frozen conditions or temporary mats used on areas traveled by vehicles. Thirty-four poles would be placed in wetlands outside of the park. Vegetation impacts are minimized and mitigated by constructing during dry or frozen conditions; or using mats. Disturbed habitat is restored to previous conditions with a native seed mix free of invasive species. Spoils from the wetlands would be removed from the wetland and spread on an upland cultivated field. Equipment and project materials would be inspected and cleaned of invasive species prior to installation.**

*Avoid or Minimize Impacts to Wildlife*

**Trees would be inspected for nests prior to any tree removal associated with the proposed project. If an eagle, osprey or Northern Goshawk nest is found, efforts would be made to keep construction activities outside of the breeding season. If not possible to avoid disturbance, an USFWS permit would be acquired for an unintentional take or disturbance of an eagle or Northern Goshawk nest. A DNR permit would be acquired to remove osprey nests when inactive.**

**The Proposer will work with DNR non-game specialists on any placement of flight diverters on all transmission lines in and around the park water bodies, streams, open wetlands, lakes, and ponds as well as nesting raptors or waterfowl nesting or flyaway areas. DNR recommends Yellow Swan Type AFD spaced at the manufacturer suggested 15-foot spacing on the ground/shield wire.**

**Impact to aquatic life would be limited as the overhead transmission line would span the waters and use effective erosion and sediment control practices, such as keeping a vegetative buffer within 50 feet of the waterbodies.**

## 14. Historic Properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

**Situated north of the proposed Project is National Register-listed Scenic State Park CCC/Rustic Style Service Yard and Gale Brook Camp. South of the proposed Project is Isaac Lake Logging Camp. All properties intersect with the proposed transmission route. Ten previously documented archaeological sites within a mile of the project are external to the proposed project area. Five buildings are listed as**

**a contributing structure to the Scenic State Park CCC/Rustic Service Yard. A sixth building is listed but unevaluated. MN State Historic Preservation Office (SHPO) concurred that the proposed Project would have no adverse effect on the National Register-listed properties, but recommended a Phase 1 archaeological survey be completed prior to construction.**

**In August 2018, Wenck conducted a Phase I archaeological survey and found no resources on the project. SHPO reviewed the reports and concurred that no historic properties would be affected by the proposed project (See Attachment 2). Should unknown properties be discovered during clearing or construction, the proposer would halt all Project activities immediately and contact the State Archaeologist.**

## 15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

**The transmission line would be visible along the roads it follows and crosses. Buildings within 500 feet of the line may have their viewshed affected by the construction of the transmission line. The closest building to the proposed transmission line is a residential garage measuring 85 feet from the transmission centerline (NW ¼ NE ¼ of Section 24, T60N, R25W). The transmission line would be built on the county road's south side and the garage is on the north. All other buildings are beyond 100 feet from the proposed transmission centerline.**

**The proposed transmission line structures would have a narrow profile designed to be less intrusive than other types of transmission structures. The following measure would be taken to minimize the visual impact to surrounding land:**

- **The proposer commits to working with DNR PAT Management, Forest Service, and private landowners, regarding place of structures, ROW and other disturbed areas.**
- **The transmission line would run parallel along existing transmission and distribution lines and other rights-of-way, to the extent possible with sound engineering principles or system reliability criteria.**
- **Place structures the maximum feasible distance from highway, trail and water crossings, within limits of structure design.**

**The appearance of the existing Hwy 7 ROW would be expanded by 50 feet and include the transmission poles placed 3 to 5 feet off the existing highway ROW edge. All existing trees in the new ROW would be removed, and no new tree growth permitted. Disturbed areas would be seeded with native species to assist reestablishment and minimize erosion concerns (see section 6.b.).**

**Engineered structures made from steel or laminated wood can eliminate the need for guy wires but would require the diameter of the pole to be increased. Steel pole structures would also require the use of a drilled pier concrete foundation. The drilled pier concrete foundation typically has a reveal height of one to two feet above the ground, the weathering steel pole is placed on the top of the drilled pier concrete foundation 6' in diameter. The use of guy wires on transmission structures allow for the pole diameter to be smaller than an engineered structure.**

**A minimum of a 50 foot width of the existing vegetation would remain on the Sandwick lakeshore. No vegetation would be removed on Lake of the Isles shore. One wood pole would be noticeable from the shores of both Sandwick and Lake of the Isles; however, the vegetation between the power line and the lakeshores would screen the rest of the poles. The conductors would be seen from Isaac Lake and the associated group campground on the south side of Hwy 7; however, vegetation would screen the poles from the lakeshore and campsites.**

**The use of wood poles allows a visual blend with similar height trees outside of the cleared ROW thereby reducing their visual effect. The proposed wood poles are 60-65 feet above ground about 375 feet apart whereas a shorter 50-55 foot pole design would span about 275 feet and require an additional five poles per mile. Both designs would meet or exceed the NESC required minimum ground clearance. The ten foot pole height difference is visually negligible to a passerby however the additional poles would be more visually distracting.**

# 16. Air

**a. Stationary Source Emissions:** Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

**Under certain conditions, localized electric fields near an energized transmission line conductor can produce small electric discharges, ionizing nearby air. This is commonly referred to as the corona effect. Most often, corona formation is related to some sort of irregularities on the conductor, such as scratches or nicks, dust buildup, or water droplets.**

**The only potential air emissions from a transmission line result from corona, which may produce ozone and oxides of nitrogen. This can occur when the electric field intensity exceeds the breakdown strength of the air. For a 69 kV transmission line, the conductor surface gradient is typically below the air breakdown level. It is unlikely any measurable emissions would occur from the conductor surface.**

**b. Vehicle Emissions:** Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

**During construction of the proposed transmission line, there would be emissions from vehicles and other construction equipment. Temporary air quality impacts caused by the proposed construction-related emissions would be expected to occur during this phase of activity. The magnitude of these emissions is influenced heavily by weather conditions and the specific construction activity taking place. Adverse impacts to the surrounding environment would be minimal because of the short and intermittent nature of the emission and dust-producing construction phases.**

**c. Dust and Odors:** Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

**Adverse impacts to the surrounding environment would be minimal because of the short and intermittent nature of the emission and dust-producing construction phases.**

**However, dust concerns are not anticipated as construction is expected during winter conditions. If dust were identified as a concern, hay, straw or biodegradable blanketing (certified free of noxious or invasive weeds) would be used. Additionally dust would be controlled by limiting construction traffic; sequence disturbances, dampening exposed soils; gravel construction entrances/access roads; and preserving vegetation as much as possible.**

# 17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

**Current average noise levels in these areas are typically in the 30 to 40 dBA range and are considered acceptable for residential land use activities. Ambient noise in rural areas is commonly made up of rustling vegetation and infrequent vehicles driving by. Higher ambient noise levels, typically 50 to 60 dBA, would be expected near roadways, urban areas and commercial and industrial properties.**

**The MPCA established daytime and nighttime noise standards by Noise Area Classifications (NAC) are provided in the table below.**

| Noise Area Classification (NAC) | Daytime $L_{50}$ | Daytime $L_{10}$ | Nighttime $L_{50}$ | Nighttime $L_{10}$ |
|---|---|---|---|---|
| 1 Residential-type land use activities | 60 | 65 | 50 | 55 |
| 2 Commercial-type land use activities | 65 | 70 | 65 | 70 |
| 3 Industrial-type land use activities | 75 | 80 | 75 | 80 |

**The residence closest to the transmission line is 110 feet. On average, homes are approximately 166 feet from the line. The closest residence to the substation is 775 feet northwest of the site. The closest building on a farm or homestead is a residential garage approximately 85 feet from the transmission line. The closest Civilian Conservation Corps buildings to the line is over 750 feet from the transmission line ROW. The substation is over 5 miles southeast of the park boundary.**

**Noise related to the project is associated with both the construction and operation of the energy transmission system.**

## Construction

**Construction noise would occur during daytime hours as the result of heavy equipment operation and increased vehicle traffic associated with the transport of construction personnel and materials to and from the work area. Noise associated with transportation and equipment operation would be temporary in nature. To mitigate noise impacts associated with construction activities, work would be limited to daytime hours between 7 a.m. and 10 p.m. weekdays. Occasionally there may be construction outside of those hours mentioned or on a weekend if the Proposer must work around customer schedules, line outages, or if the schedule has been significantly impacted due to other unanticipated factors. Heavy equipment would also be equipped with sound attenuation devices such as mufflers to minimize the daytime noise levels. Construction is expected to last six months.**

## Operational

**Operational noise levels produced by a transmission line are generally less than outdoor background levels and are therefore not usually perceivable. Proper design and construction of the transmission line in accordance with industry standards would help to ensure noise impacts are not problematic. Operational noise levels are expected to be well below the state noise limits.**

### *Substation*

**Previous analysis of the construction of this type of proposed substation indicates there would be little to no effects regarding noise.**

### *Transmission Line*

**Noise levels from the transmission during normal operation are not expected to be noticeably greater than existing levels. Transmission conductors produce noise under certain conditions. The level of noise depends on conductor conditions, voltage level and weather conditions.**

**Transmission lines can generate a small amount of sound energy during corona activity where a small electrical discharge caused by the localized electric field near energized components and conductors ionizes the surrounding air molecules. Corona is the physical manifestation of energy loss and can transform discharge energy into very small amounts of sound, radio noise, heat, and chemical reactions of the air components. Several factors, including conductor voltage, shape and diameter, and surface irregularities such as scratches, nicks, dust, or water drops can affect a conductor's electrical surface gradient and its corona performance.**

**Noise emission from a transmission line occurs during certain weather conditions. In foggy, damp, or rainy weather, power lines can create a crackling sound due to the small amount of electricity ionizing the moist air near the wires. During heavy rain, the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. Even during light rain, dense fog, snow and other times of moist air, noise levels produced by transmission lines are generally less than outdoor background levels and are therefore not usually audible.**

**The air ionization caused by corona discharges can result in the formation of audible noise and radio frequency noise. If the discharges are excessive, the audible noise can reach annoyance levels and the radio frequency discharges can cause interference with radio and television reception. The potential for radio and television signal interference, however, is largely dependent on the magnitude of the corona-induced radio frequency noise relative to the strength of the broadcast signals However, corona-induced audible noise and radio and television interference are typically not a concern for power lines with operating voltages below 161 kV, because the electric field intensity is too low to produce significant corona.**

**The industry standard for utilities is calculated based on $L_{50}$ and $L_5$ (50 to 10 percent of an hour exposure) for audible noise emissions. The worst-case scenario is when the transmission line is exposed to heavy rain conditions (one inch per hour). Anticipated levels for heavy rain conditions for a typical transmission line based on the results from the Bonneville Power Administration Corona and Field Effects Program version 3 (U.S. Department of Energy, Bonneville Power Administration (BPA), Undated) are listed in the table below.**

| $L_5$ | $L_{50}$ | Location |
|---|---|---|
| 17.7 dBA | 14.2 dBA | Edge of ROW |
| 18.8 dBA | 15.3 dBA | Directly Under Line |

## 18. Transportation

**a. Traffic:** Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

**There are currently no parking spaces and the proposed project does not include parking. Traffic estimation in 2017 showed average annual daily traffic 530 cars per day for Hwy 7. During construction of the project, approximately 20 vehicles per day would be added to traffic. During operation of the transmission line, approximately one or less vehicle per day would be added to traffic. Monday through Friday (possibly Saturdays, see section 6.b.), crews would begin mobilization at 7:00 AM from one of the staging areas. Four or five small one-ton service trucks, diggers and bucket trucks would be used daily. Vehicles would be returned to the staging area and end of workday, approximately 5:00 PM. The source of trip data was obtained in late 2018 from the MnDOT webpage for traffic data. Public transit and alternative transportation modes do not apply.**

**b. Affected Roads:** Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 *(available at: http://www.dot.state.mn.us/accessmanagement/resources.html)* or a similar local guidance.

**Most of the fourteen mile transmission line would follow along the existing ROW of Hwy 7. Temporary road closures or lane reductions may be necessary during construction. Lane closures when necessary would be of 100 ft. or less with a duration of one to two hours at each location. The lane closure would slide along the highway and be re-established at each pole location. Congestion may occur as a result but would be short-term. To insure safety and proper traffic control, flagmen, cones and signage would be used as required by the permitting road authority. After construction, operation of the line would not affect the traffic in the area.**

**c. Mitigation:** Identify measures that will be taken to minimize or mitigate project related transportation effects.

**Not Applicable. No additional measures are proposed to mitigate project-related transportation effects.**

## 19. Cumulative Potential Effects (Prepares can leave this item blank if cumulative potential effects are addressed under the applicable EAW items.)

**a. Geographic:** Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

| Resource/Effect | Timescale | Geographic Area of Impact |
|---|---|---|
| Conversion of forested areas to lower growing vegetation | Permanent | approximately 93 acres |
| Operational Stormwater – changes due to different vegetation cover | Permanent | approximately 93 acres |
| Creating barriers to wildlife, especially birds | Permanent | 14 miles |
| Altering wetlands – fill | Permanent | 304 square ft., (0.1 acre) |

| Resource/Effect | Timescale | Geographic Area of Impact |
|---|---|---|
| Altered scenic views from trail crossing and Hwy 7 | Permanent | 14 miles |
| Disruption to local traffic during maintenance of transmission line is permanent, but sporadic – average once per year. | Permanent | 2-3 spans of line |
| Operational and Maintenance Noise levels | Permanent | Immediate project vicinity and beyond – maintenance work zone |
| Air Quality during maintenance | Permanent | Immediate project vicinity and beyond |
| Construction Stormwater | Temporary | 93 acres for removal of vegetation and 17 acres for construction |
| Construction Air Quality | Temporary | Immediate project vicinity and beyond - approximately 3,927 square feet area disturbed per pole for vehicle activity |
| Construction Noise | Short-term, temporary | Approximately two miles directly impacted on an average work day |
| Traffic | Temporary | Approximately two miles impacted on an average work day |

**b. Future Projects:** Describe any reasonably foreseeable future project (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

**No reasonably foreseeable future projects were identified within the geographic scale and timeframe of the proposed project. Therefore, no other projects would contribute to the cumulative potential effects of the proposed project.**

**c. Significant Environmental Effects:** Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

**Cumulative potential effects are limited to those created by this project.**

*Loss of Forested Areas/Fragmentation*

**The proposed project will result in approximately 93 acres of forested area, converted to low growing vegetation creating more barriers to wildlife. A total of 14 miles (8.324 acres in Scenic State Park) of tall maturing trees would be removed, both altering the scenic view shed and creating a barrier to wildlife, especially birds. Future maintenance, like vegetation management and potential equipment repairs would create temporary impacts.**

*Stormwater*

**Construction and operation of the Project may result in increased Stormwater runoff due to the loss of change in vegetative cover in the project area. The proposer expects to minimize Stormwater by taking measures required under the general MPCA CSW permit, designed to limit erosion and subsequent offsite transport of sediment and nutrients to adjacent waterbodies.**

*Air Quality*

**Construction of the Project would generate a small amount of temporary fugitive dust emissions, but it is expected to be minimal because of the short and intermittent nature of the emission and dust-producing construction phases.**

*Noise*

**Construction and operation/maintenance of the Project would generate some noise. Noise is not expected to exceed state noise standards.**

*Traffic*

**The proposer's construction of the Project would result in some increased, but temporary traffic. Maintenance of the transmission line may result in minimal disruption as maintenance occurs in shorter spans of the line at a time.**

## 20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

**There are no other known or potential environmental effects that were not discussed in EAW items 1 through 19.**

***RGU CERTIFICATION.*** *(The Environmental Quality Board will only accept* ***SIGNED*** *Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

**I hereby certify that:**

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature Cynthia J Novak-Kruse Date: June 17, 2019

Title: EAW Project Manager