

Executive Summary

This Executive Summary provides a summary of the proposed project and alternatives evaluated as well as a summary of findings of the document, highlighting conclusions, areas of controversy and issues to be resolved.

Project Introduction

Otter Tail Power Company, Minnesota Power, and Minnkota Power Cooperative (the Applicants) propose to construct a 230 kilovolt (kV) transmission line between the Wilton Substation, located west of Bemidji, Minnesota, and the Boswell Substation in Cohasset, Minnesota as well as upgrades to both the Wilton and Boswell substations (the Project). Depending upon the route selected, the Project may also expand the existing Cass Lake Substation, construct a new substation in the Cass Lake area, and/or construct a new Nary Breaker Station.

Co-Lead Agencies – Minnesota Office of Energy Security and the USDA Rural Utilities Service

High voltage transmission lines constructed in Minnesota require a route permit from the Minnesota Public Utilities Commission (Commission). The route permitting process is governed by Minnesota Rules part 7850. The Applicants made a joint application to the Commission for a route permit for the Project. As part of the permitting process for the high voltage transmission line, the Minnesota Department of Commerce Office of Energy Security (OES) prepared this Environmental Impact Statement (EIS) for the Project.

Minnkota Power Cooperative also has approached the United States Department of Agriculture Rural Utilities Service (RUS) for financial assistance to construct the Project. RUS has determined that the agency's decision about whether to finance the Project would constitute a major federal action that may have a significant impact upon the environment within the context of the National Environmental Policy Act of 1969 (NEPA). Thus, RUS serves as the lead federal agency for the NEPA environmental review of the Project. RUS also is responsible for ensuring compliance with Section 106 of the National Historic Preservation Act (NHPA), upholding Treaties of the United States with the Leech Lake Band of Ojibwe (LLBO) and meeting their trust obligations to the LLBO, and for initiating informal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA) to determine the likelihood of effects on federally listed species.

As co-lead agencies, OES and RUS prepared this EIS in compliance with the requirements of NEPA and the Council on Environmental Quality regulations for

implementing NEPA (40 CFR 1500 -1508). This DEIS was prepared to meet the following key objectives:

- Identify and assess potential impacts on the natural and human environment that would result from the Project;
- Identify and assess the potential impacts of the Project on the Federal Treaties and Trust Obligation to the Leech Lake Band of Ojibwe;
- Meeting Consultation Requirements for Section 106 of the NHPA
- Describe and evaluate reasonable alternatives, including a No-Build Alternative, to the Project that would avoid or minimize adverse effects to the environment; and
- Identify specific mitigation measures to minimize environmental impacts.

Cooperating Federal Agencies

In addition to the co-lead agencies, the U.S. Forest Service (USFS) Chippewa National Forest (CNF), the U.S. Army Corps of Engineers (USACE), and the Leech Lake Band of Ojibwe Division of Resources Management (LLDRM) agreed to assist the RUS as cooperating agencies in preparing this EIS. The roles of these agencies are described below.

Chippewa National Forest

The Applicants have applied to USFS CNF for a Special Use Permit to construct and operate the Project on National Forest Service (NFS) lands. The Forest Supervisor is responsible for management and evaluation of the occupation and use of NFS lands and may grant a special use on those lands in accordance with the Federal Land Policy and Management Act (FLPMA) of 1976. The USFS must also meet the U.S. Government Treaty and trust obligations to the Leech Lake Band of Ojibwe. The Forest Supervisor of the CNF must determine whether to issue a special use permit for the Project. Any action taken by the Forest Supervisor must be consistent with the objectives of the CNF Land and Resource Management Plan (Forest Plan), as revised in 2004.

U.S. Army Corps of Engineers

The Applicants would apply to the U.S. Army Corps of Engineers (USACE) for a permit for the Project under Sections 404 of the Clean Water Act and Section 10 of the 1899 Rivers and Harbor Act. Section 404 of the Clean Water Act relates to the placement of dredge and/or fill material in the waters of the United States, including adjacent wetlands. Section 10 regulates the placement of structures in, on, or over navigable waters of the U.S. The USACE must determine whether or not to issue a Section 404 and Section 10 permit for the Project. The USACE must also meet the U.S. Government Treaty and trust obligations to the Leech Lake Band of Ojibwe.

Leech Lake Band of Ojibwe

The Applicants have requested that the Leech Lake Reservation Tribal Council (RTC) permit the Project to cross the proclamation boundaries of the Leech Lake Reservation (LLR). The Tribe retains treaty rights for all lands, regardless of land ownership or management, within the LLR boundaries. The LLBO is responsible for issuing the appropriate approval and authorizations for activities to cross lands upon which it retains treaty rights and easements or authorizations for activities on lands under its jurisdiction. Not all land inside the LLR boundaries is managed by the Tribe, but rather includes a patchwork of multiple owners and managers, including tribal trust land, tribal fee land, state land, federal land, county land, and private ownership.

The Leech Lake Division of Resource Management (LLDRM) is responsible for overseeing the development of land leases, easements, and Allotments Tribal and Band lands approved by the RTC and the Bureau of Indian Affairs (BIA). The LLDRM also works with the BIA and owners of tribal titled lands that the Project would cross to obtain their consent and easements or other agreements. The LLDRM analyzes proposed projects for their effect on never relinquished hunting, fishing, and gathering treaty rights of the LLBO on lands within the LLR. The LLDRM's review also includes impacts to gathering activities for tribally important species including but not limited to wild rice, blueberries, and sweetgrass. For the purpose of this EIS document the LLBO assumes the role of a Federal Entity, while still remaining a sovereign government.

The Director of the LLDRM has authority to participate in the environmental review of projects and to prepare joint or separate Environmental Assessment (EA) or EIS documents for those projects that occur on lands within the LLR boundaries. The LLDRM Director has decided to be a full cooperating agency in this EIS. This EIS, and the other environmental documents issued in connection with the Project, will assist the LLDRM Director in making a decision about the merits of this Project and whether or not to sign a decision notice for the Project, and to prepare any necessary easements and other permits needed to cross the reservation. This EIS will be used to provide information sufficient to make a decision on the request to obtain permission to cross the reservation, and any easements, Allotments, Tribal or Band lands, and to receive Reservation Resolution.

Trust Responsibility

American Indian lands in the lower 48 States comprise over 45 million acres of reserved lands and an additional 10 million in individual allotments (USFWS, 2010). These lands contain sacred and cultural sites and many natural resources that are used by tribes for cultural and subsistence activities.

As representatives of the federal government, federal agencies have a responsibility to manage natural resources in adherence with the following objectives:

- *reflects Federal trust responsibility toward Indian tribes*
- *respects tribal rights*
- *acknowledges the treaty obligations of the United States toward tribes*
- *uses the government-to-government relationship in dealing with tribes*
- *protects natural resources that the Federal government holds in trust for tribes (USFWS, 2010).*

Within the Project area, RUS and the federal cooperating agencies have a trust responsibility to manage natural resources in accordance with the objectives noted above and with consideration to the specific land use policies of the Leech Lake Band of Ojibwe. Where the Project would result in long-term impacts to natural resources within the Leech Lake Reservation, federal agencies have the responsibility to mitigate such impacts.

Purpose and Need for Action

The Applicants propose to construct and operate the Project to meet projected future electric demand and to maintain electric transmission reliability standards in accordance with the requirements of the North American Reliability Council (NERC). In addition to meeting the future needs of the Bemidji area, the Project is intended to maintain regional transmission reliability for the larger northwestern Minnesota and eastern North Dakota region. The area is susceptible to low voltage conditions if the Winger – Wilton 230 kV transmission line is out of service during winter peak load conditions.

The electric power demand in the Bemidji area is growing at a rate of approximately 2 percent per year. Although interim measures to improve the electric transmission system have been taken, such as adding voltage support, the peak load is anticipated to reach 296 MW by the winter of 2011-2012, or approximately 135 percent of the system's maximum load-serving capability of 220 MW. The Applicants estimate that the peak load would reach approximately 360 MW by winter 2022-2023. Without improvements to address this deficit, the area would be in a situation of local load-serving inadequacy, meaning that in the event of the loss of local transmission capability, the area could be subject to brownouts or blackouts.

The Project also would facilitate the addition of new generation sources in the region by increasing the transfer of additional capacity from the North Dakota Export boundary to the Twin Cities metropolitan area. At the time of this EIS, there are no specific generation projects and therefore the assessment of the impacts of new generation is not included in this EIS.

Regulatory Framework

The following sections summarize the primary framework that provides the regulatory basis for each federal and state agency's role in approving the Applicants' Project and guides the permitting process.

Route Permit

The Commission has the responsibility for routing transmission lines capable of operating at or above 100 kV in Minnesota. The Applicants have applied to the Commission for a Route Permit for the Project. The Project is considered a High Voltage Transmission Line under Minnesota Statute 216E (Minnesota Power Plant Siting Act) and requires a route permit from the Commission. When the Commission issues a route permit, zoning, building, and land use regulations are preempted per Minnesota Statute 216E.10, subd. 1.

The Commission's route permit determination must be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land-use conflicts, and ensuring the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure (Minn. Stat. 213E.03, subd. 7a). These criteria are more fully developed in MN Rules 7849.5910. The process contains several opportunities for public involvement throughout the process.

As part of this permitting process, the OES prepares an EIS to provide information to the Commission, to assist in its decision about the route permit for the Project. The EIS contains information about the human and environmental impacts of the Project and selected alternatives, and addresses mitigation measures for anticipated impacts.

Certificate of Need

Because the Project is considered a Large Energy Facility under Minnesota Statute 216B.2421, a Determination of Need for the Project also is required from the Commission. The Certificate of Need process is designed to evaluate the level of need, as well as the alternatives available to satisfy that need. The Certificate of Need process is the only proceeding under Minnesota Statute in which a no-build alternative and the size, type, timing, system configuration, and voltage of a proposed project would be considered. The Commission determines the basic type of facility (if any) to be constructed, the size of the facility, and the timing of the facility (e.g., the projected in-service date).

The Certificate of Need process is governed by Minnesota Rules 7849.1000-2100. The OES prepares an Environmental Report analyzing the human and environmental impacts of each proposed large energy facility that have come before the Commission

for a determination of need. The Applicants applied for a Certificate of Need for the proposed transmission line on March 17, 2008. The *Environmental Report* prepared for the Project was released on April 30, 2009. The Commission issued an order determining the need for the Project on July, 14, 2009.

National Environmental Policy Act

NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of, and reasonable alternatives to, their proposed actions. For major federal actions that have the potential to cause significant adverse impacts on the environment, NEPA requires agencies undertaking the action to prepare an EIS.

RUS has determined that providing financial assistance for the construction and operation of the Project constitutes a major federal action that may significantly affect the quality of the natural and human environment. Therefore, the EIS process is underway in accordance with 7 CFR 1794 Subpart G - Procedure for Environmental Impact Statement. In addition, RUS prepared this EIS for use by decision-makers in determining whether or not to provide assistance for construction and operation of the Project in the form of a loan to Minnkota Power Cooperative, one of the Applicants.

Clean Water Act

Clean Water Act Section 404 authorization is required for the Project, because its construction would require discharge of dredged and/or fill material into waters of the United States. As a cooperating agency in preparation of this EIS, and the agency responsible for determining whether to issue a permit for wetland impacts associated with the Project, it is the USACE's intention to adopt the EIS as part of its review of the Project.

Treaties of the United States Government with the Leech Lake Band of Ojibwe

The United States entered into a number of treaties with the Leech Lake Band of Ojibwe under which the LLBO retained rights to many of the resources on the LLR. All Federal agencies have trust obligations to assure that this Project does not infringe or negate the LLBO's ability to exercise these retained treaty rights.

Public Scoping

Both the Power Plant Siting Act and NEPA require that agencies responsible for preparing environmental review documents involve the public in environmental review

of projects. Through the scoping process, OES and RUS invited federal, state, and local units of government; Native American tribes; organizations; and individuals interested in the Project to comment on the Project proposed by the Applicants and to identify issues and concerns to be addressed in the EIS.

Both OES and RUS are required to schedule at least one public meeting in the area of the proposed Project. The purpose of the meeting is to inform the public about the Project and to solicit public input into the scope of the environmental review. A “scope” is a determination of what needs to be assessed in the environmental review to fully inform decision-makers and the public about the possible impacts of a project or potential alternatives.

The OES Energy Facilities Permitting Unit and RUS held public information meetings in Blackduck, Cass Lake, Deer River, Bemidji, and Walker in August 2008. Approximately 120 people attended the public information meetings. In addition to the oral comments received at the public information meetings, more than 120 written comments were received by the close of the public comment period on September 30, 2008. Following the close of the comment period, OES staff reviewed the public comments about the scope of the environmental review and the rules governing the content of an EIS (site rule). Based upon that review, the Director of the OES issued a Scoping Decision on March 31, 2009.

Proposed Action, Alternatives, and Scope of the EIS

The Applicants propose constructing a 230 kV electric transmission line from Minnkota Power Cooperative’s Wilton Substation located just west of Bemidji, Minnesota, to Minnesota Power’s Boswell Substation in Cohasset, Minnesota, northwest of Grand Rapids, Minnesota. The Bemidji area includes the communities of Bagley to the west, Walker to the south, and Blackduck to the northeast, as well as a large portion of the Leech Lake Reservation. This section provides an overview of the alternatives evaluated in the EIS, as well as the potential impacts and mitigation measures.

The Applicants presented information on two routes in their June 4, 2008, *Route Permit Application*. Both of these routes are generally in the vicinity of U.S. Highway 2. Route Alternative 1, identified by the Applicants as their preferred route, generally follows the Great Lakes Gas Transmission Company pipeline and a 115 kV transmission line rights-of-way. Route Alternative 2, the Applicants’ Alternate Route, generally follows U.S. Highway 2 and the Enbridge pipeline rights-of-way. Under Minnesota Statute 216E.03, the EIS must evaluate alternatives proposed by the Applicants.

The federal agencies consider both of the Applicant-proposed routes to be located within one study area, referred to as a “Macrocorridor” their screening materials. The Applicants prepared an *Alternative Evaluation Study* and a *Macrocorridor Study Report* in accordance with RUS guidelines. At the request of the CNF, RUS, and LLDRM three additional Macrocorridors were developed by the Applicants to evaluate whether

potentially routing along one of these corridors might merit further investigation. These four Macrocorridors (referred to as the Central, North, South and non-CNF) were identified and noticed in area newspapers and in direct mail notification to approximately 11,000 potentially affected landowners.

Based on the scoping response and further analysis detailed in the Scoping Decision/Report, the federal agencies require that the EIS must evaluate a viable route alternative different from the two route alternatives originally proposed by the Applicants. In conjunction with the Applicants, OES staff developed 1,000-foot routes within each of the additional three “macrocorridors” and compiled a variety of social and environmental data on each of the routes. Staff from OES, LLBO, and federal partner agencies reviewed more detailed social and environmental information for the five routes (i.e., the two Applicant-proposed routes and one in each of the additional three macrocorridors). It was concluded that one additional route, located in the North macrocorridor and hereafter referred to as Route Alternative 3, should be fully evaluated in the EIS. This route avoids the heart of the Chippewa National Forest and largely avoids the Leech Lake Reservation.

During this review process, a number of concerns related to Route Alternative 1 were identified by agencies participating in the environmental review. The agencies identified potentially significant impacts to traditional cultural, biological, and socioeconomic resources along this route alternative. Additionally, impacts to the “Ten Section” area or the Pike Bay Experimental Forest would require a Forest Plan Amendment. Although several flaws were identified with this route alternative, Minnesota Statute 216E.03, subdivision 5, requires the evaluation of all routes proposed by the Applicant. More information on these concerns is provided in the RUS *Scoping Decision/Report* (Appendix A) and in the public comment summary (Appendix B).

Table ES-1: Summary of Route Alternatives

		No-Build Alternative	Route Alternative 1	Route Alternative 2	Route Alternative 3
Meets Identified Purpose and Need for Project		No	Yes	Yes	Yes
Route Length (miles)		N/A	69	68	116
Existing Linear Features (miles)	Transmission Lines	N/A	18	9	91
	Pipelines	N/A	61	48	8
	Highways	N/A	25	60	32
Length of new Corridor (miles)		N/A	5.2	2.6	5.1
New Corridor as a % of Route		N/A	7.5 %	3.8 %	4.4%
Cass Lake Substation		N/A	New (4 acres)	Expand (2.2 acres)	Expand (2.2 acres)
Nary Breaker Station		N/A	Yes, Depending upon Route (2.5 acres)	N/A	N/A
Wilton Substation		N/A	Add new Equipment; no expansion	Add new Equipment; no expansion	Add new Equipment; no expansion
Boswell Substation		N/A	Expand (1.3 acres)	Expand (1.3 acres)	Expand (1.3 acres)
Estimated Cost (\$ million)		N/A	\$62.6 – \$65.3	\$65.6	\$99..1

No-Build Alternative

Under the No-Build Alternative the Project would not be constructed. Instead, significant load management and conservation measures would be implemented to limit energy load growth and the local reactive power supply would need to be improved to enable the current transmission system to handle the projected increase in energy demand. The No-Build Alternative described in the Application combined additional demand-side management, reactive power supply (capacitors), and greater use of local generation (the Solway Generating Station).

The OES Energy Regulatory Planning (ERP) staff estimates that a minimum of 110 MW of load reduction would be required to function as a viable alternative to the Project. ERP staff based this estimate on the 110 MW of dispatchable distributed generation identified as an alternative on page 56 of their Application. The Applicants estimate this amount would be needed to provide the redundancy to ensure that at least 76 MW would always be available.

To ensure voltage stability in the event of loss of one or more transmission sources into the area, the region’s reactive power supply would require improvements. Energy demand in the Bemidji area is met primarily by power generated outside the area and transmitted to the area via the bulk transmission system. Otter Tail Power’s Solway Generating Station, a 40 MW dual-fueled (natural gas and oil) peaking generator located approximately 13 miles west of Bemidji, is the only generator in the Bemidji area. The

Solway Generating Station also has the ability to operate as a source for dynamic reactive power supply.

Route Alternative 1

This route, referred to as Route 1 in the *Route Permit Application*, is approximately 69 miles long and generally follows the Great Lakes Gas Transmission Company pipeline and an 115 kV transmission line ROWs. This alternative would add equipment to the Wilton Substation and expand the Boswell Substation by approximately 1.3 acres to accommodate additional equipment. Under this alternative, a new 4-acre 230 kV substation would be constructed in Pike Bay Township in Cass County. Under certain routes, a new breaker station may be constructed near the existing Nary Breaker station. There are 12 Segment Alternatives associated with Route Alternative 1.

Route Alternative 2

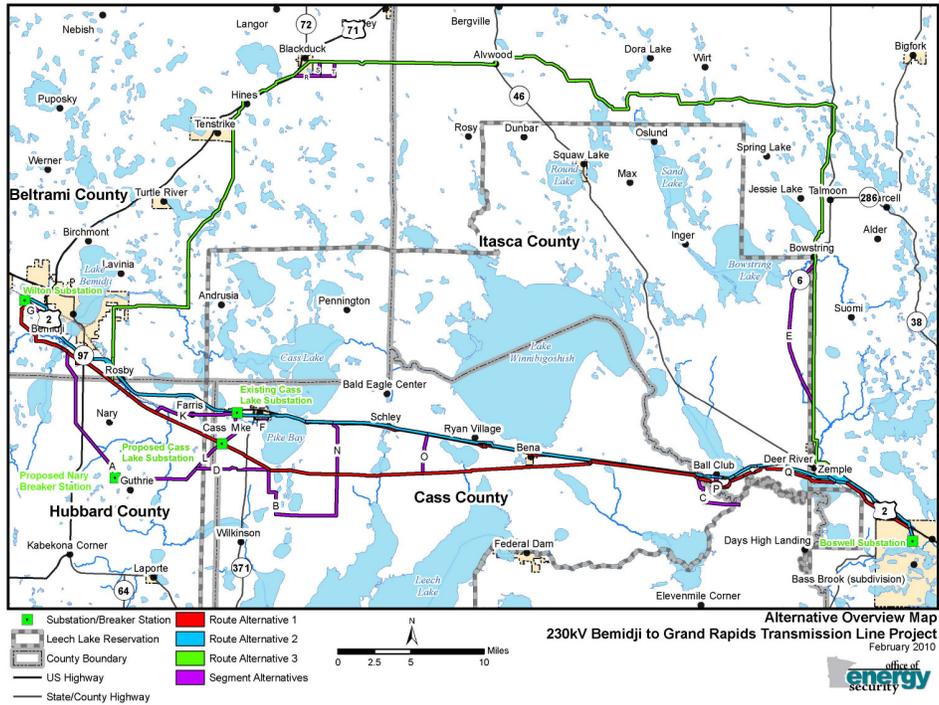
This route, referred to as Route 2 in the *Route Permit Application*, was proposed by the Applicants as an alternate route in their application to the Commission. This route is approximately 68 miles long and generally follows U.S. Highway 2 and the Enbridge pipeline ROWs. As with Route Alternative 1, this alternative would also entail additional 230 kV equipment to the Wilton Substation and would expand the Boswell Substation by approximately 1.3 acres to permit the addition of 230 kV equipment. Under this Route Alternative, the existing Cass Lake Substation would be expanded by approximately 2.2 acres to accommodate new 230 kV equipment. There are 11 Segment Alternatives associated with Route Alternative 2.

Route Alternative 3

This route follows existing pipeline, transmission, and road ROWs for most of its 116 miles. The route follows a series of transmission lines and roads between the Wilton Substation, northeast to the Blackduck area, east and then south to Deer River, and then southeast to the Boswell Substation. This route avoids a major gateway to the Chippewa National Forest and avoids bisecting the Leech Lake Reservation. This alternative would include improvements to the Wilton Substation and would expand the Boswell Substation by approximately 1.3 acres, but no additional substations or breaker stations would be constructed or expanded. There are four Segment Alternatives associated with Route Alternative 3.

Route and Segment Alternatives are shown below in Figure ES-1.

Figure ES-1: Route and Segment Alternative Overview Map



Potential Impacts

Potential direct and indirect impacts were identified and evaluated for each aspect of the natural and built environments potentially affected by the Project. These potential impacts of the Project route alternatives and the No-Build Alternative are summarized in Table ES-2, below.

Table ES-2: Comparative Impacts of Route Alternatives

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Treaty Trust Resources				
Direct impacts	Long-term loss of an important gathering area for tribal members.	Some long-term loss of gathering opportunities for tribal members.	Minimal loss of gathering opportunities for tribal members due to avoidance of the LLR.	No effect.
Aesthetics				
Direct impacts	Loss of scenic resources; loss of trees would change view; contrast to surrounding landscape. Conversion of 579 acres of forested area. Impact to spiritual and significant cultural area of the Leech Lake Band of Ojibwe; Aniishinaabe cultural and spirituality is tied to land and the surrounding environment so any disturbance to this visual or aesthetics of Route Alterantive 1 corridor would have a direct affect to the Leech Lake People. Impacts to Ten Section management area	Loss of scenic resources; loss of trees would change view; contrast to surrounding landscape. Conversion of 439 acres of forested area. Alternative 2, which follows U.S.-2, would be visible to visitors and residents due to less forest cover to shield views and would be located near more recreational areas.	Loss of scenic resources; loss of trees would change view; contrast to surrounding landscape. Conversion of 813 acres of forested area.	No effect.
Air Quality and Climate				
Direct Impacts	Fugitive dust and vehicle emissions during construction.	Fugitive dust and vehicle emissions during construction.	Fugitive dust and vehicle emissions during construction. Alternative 3 would result in the greatest duration of construction effects due to its length.	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Indirect Impacts	Minor decrease in carbon sequestration potential due to loss of existing trees.	Minor decrease in carbon sequestration potential due to loss of existing trees.	Minor decrease in carbon sequestration potential due to loss of existing trees.	No effect.
Geology and Soils				
Topography	No effect.	No effect.	No effect.	No effect.
Geology	No effect.	No effect.	No effect.	No effect.
Soils	Soils would be disturbed during construction; erosion and compaction are possible. Temporary soil impacts from transmission line structures for entire route are 876 acres and long-term impacts are 3 acres. Temporary soil impacts to LLR from transmission line structures are 618 acres and long-term impacts are 2 acres. Temporary soil impacts to CNF from transmission line structures are 341 acres and long-term impacts is 1 acre. Long-term impacts from substation construction and expansion could range up to 7.8 acres.	Soils would be disturbed during construction; erosion and compaction are possible. Temporary soil impacts from transmission line structures for entire route are 931 acres and long-term impacts are 3 acres. Temporary soil impacts to LLR from transmission line structures are 631 acres and long-term impacts are 2 acres. Temporary soil impacts to CNF from transmission line structures are 281 acres and long-term impacts is 1 acre. Long-term impacts from substation construction and expansion are 3.5 acres.	Soils would be disturbed during construction; erosion and compaction are possible. Temporary soil impacts from transmission line structures for entire route are 1,070 acres and long-term impacts are 5 acres. Temporary soil impacts to LLR from transmission line structures are 4 acres and long-term impacts are 0 acres. Temporary soil impacts to CNF from transmission line structures are 846 acres and long-term impacts are 3 acres. Long-term impacts from substation construction and expansion are 3.5 acres.	No effect.
Water Resources				

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Surface Water	<p>No major effect. If water bodies cannot be spanned, shore erosion, sedimentation, and changes in turbidity may occur.</p> <p>Crosses 4 water basins and 6 water courses along entire route.</p> <p>Crosses 3 water basins and 5 water courses on the LLR.</p> <p>Crosses 4 water basins and 5 water courses on CNF.</p>	<p>No major effect. If water bodies cannot be spanned, shore erosion, sedimentation, and changes in turbidity may occur.</p> <p>Crosses 2 water basins and 7 water courses along entire route.</p> <p>Crosses 2 water basins and 7 water courses on the LLR.</p> <p>Crosses 2 water basins and 2 water courses on CNF.</p>	<p>No major effect. If water bodies cannot be spanned, shore erosion, sedimentation, and changes in turbidity may occur.</p> <p>Crosses 9 water basins and 27 water courses along entire route.</p> <p>No water basin or water course crossings on LLR.</p> <p>Crosses 8 water basins and 15 water courses on CNF.</p>	No effect.
Groundwater	No major effect.	No major effect.	No major effect.	No major effect.
Floodplains				
Direct Effects	<p>No major effect. If water bodies cannot be spanned, erosion or sedimentation may result in a loss of surrounding floodplains.</p> <p>Possible location of 8 structures in the FEMA designated areas.</p>	<p>No major effect. If water bodies cannot be spanned, erosion or sedimentation may result in a loss of surrounding floodplains.</p> <p>Possible location of 4 structures in the FEMA designated areas.</p>	<p>No major effect. If water bodies cannot be spanned, erosion or sedimentation may result in a loss of surrounding floodplains.</p> <p>Possible location of 46 structures in the FEMA designated areas with 16 in the CNF.</p>	No effect.
Wetlands				
Direct Effects	Potential loss or conversion of wetlands.	Potential loss or conversion of wetlands.	<p>Potential loss or conversion of wetlands.</p> <p>The highest amount of wetland type conversion would occur for Alternative 3.</p>	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
	Potential effects to NWI wetlands: temporary impacts to 83 acres, wetland conversion of 209 acres, and <1 acre of long-term impacts along entire route.	Potential effects to NWI wetlands: temporary impacts to 59 acres, wetland conversion of 166 acres, and <1 acre of long-term impacts along entire route.	Potential effects to NWI wetlands: temporary impacts to 101 acres, wetland conversion of 269 acres, and <1 acre of long-term impacts along entire route.	
	113 structures are estimated in NWI wetlands.	93 structures are estimated in NWI wetlands.	120 structures are estimated in NWI wetlands.	
Indirect Effects	Conversion of wetland types may result in a change in wildlife species composition, diversity, and abundance.	Conversion of wetland types may result in a change in wildlife species composition, diversity, and abundance.	Conversion of wetland types may result in a change in wildlife species composition, diversity, and abundance.	No effect.
Biological Resources				
Direct Effects	Conversion of existing vegetation communities (1,048 acres).	Conversion of existing vegetation communities (1,018 acres).	Conversion of existing vegetation communities (1,759 acres).	No effect.
	Disturbance of intact diverse native plant communities.	Disturbance of intact diverse native plant communities.	Disturbance of intact diverse native plant communities.	
	Introduction or spread of noxious weeds in cleared ROWs.	Introduction or spread of noxious weeds in cleared ROWs.	Introduction or spread of noxious weeds in cleared ROWs.	
	Short-term impacts to wildlife from conversion of forested habitat.	Short-term impacts to wildlife from conversion of forested habitat.	Short-term impacts to wildlife from conversion of forested habitat.	
	Long-term conversion of wildlife habitat in areas that remain cleared and increased long-term fragmentation and edge effect (5.2 miles of new corridors).	Long-term conversion of wildlife habitat in areas that remain cleared and increased long-term fragmentation and edge effect (5.1 miles of new corridors).	Long-term conversion of wildlife habitat in areas that remain cleared and increased long-term fragmentation and edge effect (2.3 miles of new corridors).	
	Would establish a long-term ROW in canopy forest.			
Species of Special Concern				

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Direct Effects	<p>Potential for habitat conversion.</p> <p>Destruction of non-motile plant species, if located within ROW.</p> <p>Disturbance of intact diverse native plant communities.</p> <p>Affects Ten Section Area by converting forested land, resulting in habitat conversion and edge effect.</p> <p>MnDNR and LLDRM have preliminarily determined Route Alternative 1 would jeopardize the only known one-flowered broomrape population in Northern Minnesota.</p>	<p>Potential for habitat conversion.</p> <p>Destruction of non-motile plant species, if located within ROW.</p> <p>Disturbance of intact diverse native plant communities</p> <p>Affects periphery of Ten Section Area by converting forested land, resulting in habitat conversion and edge effect.</p>	<p>Potential for habitat conversion.</p> <p>Destruction of non-motile plant species, if located within ROW.</p> <p>Disturbance of intact diverse native plant communities</p>	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Cultural Resources and Values including TCPs				
Direct Effects	<p>Potential loss or disturbance of cultural resources or sites</p> <p>Potential impacts on the viewshed of historical structures or landscapes.</p> <p>Potential to disturb unrecorded archaeological sites.</p> <p>Long-term loss of TCPs and locations where they are gathered.</p> <p>Impact to the vitality of the spiritual well-being of tribal residents who use TCPs.</p> <p>Presence of transmission line would alter cultural experience in areas identified as culturally significant, including Ten Section and Guthrie Till Plain areas.</p>	<p>Potential loss or disturbance of cultural resources or sites</p> <p>Potential impacts on the viewshed of historical structures or landscapes.</p> <p>Potential to disturb unrecorded archaeological sites.</p> <p>Long-term loss of TCPs and locations where they are gathered.</p> <p>Impact to the vitality of the spiritual well-being of tribal residents who use TCPs.</p>	<p>Potential loss or disturbance of cultural resources or sites</p> <p>Potential impacts on the viewshed of historical structures or landscapes.</p> <p>Potential to disturb unrecorded archaeological sites.</p>	No effect.
Land Use				
Direct Effects	<p>Temporary and long-term loss of land use by private owners.</p> <p>Temporary and long-term land impacts within ROW: 879 acres of which 579 acres of forested land will have long-term impacts.</p> <p>Conversion of 4 acres for new Cass Lake substation. Additional acreage may be required for possible expansion at Nary Junction.</p>	<p>Temporary and long-term loss of land use by private owners.</p> <p>Temporary and long-term land impacts within ROW: 934 acres of which 439 acres of forested land will have long-term impacts.</p>	<p>Temporary and long-term loss of land use by private owners.</p> <p>Temporary and long-term land impacts within ROW: 1391 acres of which 825 acres of forested land will have long-term impacts.</p>	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
	Total LLR temporary and long-term impacts: 620 acres; 433 acres of long-term forested land impacts. Total CNF temporary and long-term impacts: 342 acres; 294 acres of long-term forested land impacts.	Total LLR temporary and long-term impacts: 633 acres; 338 acres of long-term forested land impacts. Total CNF temporary and long-term impacts: 282 acres; 202 acres of long-term forested land impacts.	Total LLR temporary and long-term impacts: 4 acres; 1 acres of long-term forested land impacts. Total CNF temporary and long-term impacts: 840 acres; 584 acres of long-term forested land impacts.	
Indirect Effects	Potential for increased trespassing through creation of easements.	Potential for increased trespassing through creation of easements.	Potential for increased trespassing through creation of easements.	No effect.
Socioeconomics				
Direct Effect	Short-term influx of income during construction and increased tax base (property taxes from the Applicant) during operation of the project. Economic benefit to businesses and surrounding communities through increased electrical capacity and reliability. Potential decrease in property values. Least potential to directly affect residences. Up to 579 acres of forest land lost from timber harvesting. Greatest potential for impacts to subsistence uses from conversion and fragmentation of habitat and introduction of invasive species. Potential of up to 662 acres of total ROW within the LLR.	Short-term influx of income during construction and increased tax base (property taxes from the Applicant) during operation of the project. Economic benefit to businesses and surrounding communities through increased electrical capacity and reliability. Potential decrease in property values. Greatest potential to directly affect residences. Up to 439 acres of forest land lost from timber harvesting. Moderate potential for impacts to subsistence uses from conversion and fragmentation of habitat and introduction of invasive species. Potential of up to 660 acres of total ROW within the LLR.	Short-term influx of income during construction and increased tax base (property taxes from the Applicant) during operation of the project. Economic benefit to businesses and surrounding communities through increased electrical capacity and reliability. Potential decrease in property values. Greatest potential to directly affect residences. Up to 638 acres of forest land lost from timber harvesting. Least potential for impacts to subsistence uses from conversion and fragmentation of habitat and introduction of invasive species. Potential of up to 4 acres of total ROW within the LLR.	Would not meet the area's need for reliable electric supply.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Indirect Effects	Increased timber sales in the vicinity of the project during construction, but loss of future timber resources.	Increased timber sales in the vicinity of the project during construction, but loss of future timber resources.	Increased timber sales in the vicinity of the project during construction, but loss of future timber resources.	No effect.
Environmental Justice				
Direct Effects	Crosses the homeland of Minority Community. Will result in long-term loss of gathering lands and temporary disruption to hunting and gathering will occur during construction. Long-term aesthetic impacts to Minority Community	Crosses the homeland of Minority Community. Will result in long-term loss of gathering lands and temporary disruption to hunting and gathering will occur during construction. Long-term aesthetic impacts to Minority Community	Largely avoids the LLR. Will result in loss of a small amount of gathering lands on LLR and temporary disruption to hunting and gathering will occur during construction.	No effect.
Indirect Effects	Aesthetic intrusion would alter cultural experience in areas identified as culturally significant, including Ten Section and Guthrie Till Plain areas.			
Recreation and Tourism				
Direct Effects	Removal of forested land within the LLR and CNF. Possible location of the ROW within the Bemidji Slough or Bemidji State Game Refuge. Potential Bemidji Slough impacts: 5 acres temporarily and 675 square feet long-term. Potential Bemidji State Game Refuge impacts: 65 acres temporarily and 0.2 acres long-term.	Removal of forested land within the LLR and CNF. Possible location of the ROW within the Bemidji State Game Refuge. Potential Bemidji State Game Refuge impacts: 124 acres temporarily and 0.3 acres long-term.	Removal of forested land within the CNF. Possible location of the ROW within the Bemidji Slough or Bemidji State Game Refuge. Potential Bemidji Slough impacts: 4.3 acres temporarily and 561 square feet long-term. Potential Bemidji State Game Refuge impacts: 111 acres temporarily and 0.3 acres long-term.	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Indirect Effects	Changes to vegetation and land cover within easement may impact wildlife habitat and affect hunting areas. Creation of easements may increase the opportunities for OHV/snowmobile trails. Unexpected noise levels (during construction) or viewshed changes may affect non-motorized recreational activities.	Changes to vegetation and land cover within easement may impact wildlife habitat and affect hunting areas. Creation of easements may increase the opportunities for OHV/snowmobile trails. Unexpected noise levels (during construction) or viewshed changes may affect non-motorized recreational activities.	Changes to vegetation and land cover within easement may impact wildlife habitat and affect hunting areas. Creation of easements may increase the opportunities for OHV/snowmobile trails. Unexpected noise levels (during construction) or viewshed changes may affect non-motorized recreational activities.	No effect.
Agriculture				
Direct Effects	Loss of agricultural land (52 acres temporarily and 0.7 acres long-term) and prime farmland (1.3 acres long-term). Largest loss of agricultural and farmland on LLR. Potential interference with agricultural activities (maneuvering equipment around poles and aerial spraying).	Loss of agricultural land (31 acres temporarily and 0.3 acres long-term) and prime farmland (0.7 acres long-term). Potential interference with agricultural activities (maneuvering equipment around poles and aerial spraying).	Loss of agricultural land (119 acres temporarily and 2 acres long-term) and prime farmland (3.6 acres long-term). No affect to agricultural/farmland on LLR. Potential interference with agricultural activities (maneuvering equipment around poles and aerial spraying).	No effects.
Forestry				
Direct Effects	Long-term loss of forested land and timber resources.	Long-term loss of forested land and timber resources.	Long-term loss of forested land and timber resources.	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
	Conversion of about 579 acres of forested area to managed shrub and grasslands along entire route; 433 acres in LLR; 294 acres in CNF. 4 acres of forest land lost for new Cass Lake substation. Lost opportunity for silvicultural research in Pike Bay Experimental Forest. Affects Ten Section Area by converting forested land and resulting in loss of old growth.	Conversion of about 439 acres of forested area to managed shrub and grasslands along entire route; 335 acres in LLR; 202 in CNF. Affects periphery of Ten Section Area by converting forested land and resulting in loss of old growth.	Conversion of about 813 acres of forested area to managed shrub and grasslands along entire route; 1 acre in LLR; 584 acres in CNF.	
Mining	No major effect.	No major effect.	No major effect.	No effect.
Community Services	No major effect.	No major effect.	No major effect.	No effect.
Utility Systems				
Direct Effects	Potential interference with omnidirectional and unidirectional antenna, resulting in TV and radio interference. Electrical interference on underground pipelines.	Potential interference with omnidirectional and unidirectional antenna, resulting in TV and radio interference. Electrical interference on underground pipelines.	Potential interference with omnidirectional and unidirectional antenna, resulting in TV and radio interference. Electrical interference on underground pipelines.	Demand on existing transmission system would increase and brownouts (leading to blackouts) could occur.
Traffic and Transportation				
Direct Effects	Short-term road traffic and rail delays during construction. Electrical interference to railroads.	Short-term road traffic and rail delays during construction. Electrical interference to railroads.	Short-term road traffic and rail delays during construction. Electrical interference to railroads.	No effect.

Resource	Route Alternative 1 and associated Segment Alternatives	Route Alternative 2 and associated Segment Alternatives	Route Alternative 3 and associated Segment Alternatives	No-Build Alternative
Indirect Effects	Loss of living snow fences along highways, resulting in snow drift for drivers. Follows 25 miles of existing highway ROW. Potential conflicts with future roadway expansion.	Loss of living snow fences along highways, resulting in snow drift for drivers. Follows 60 miles of existing highway ROW. Potential conflicts with future roadway expansion.	Loss of living snow fences along highways, resulting in snow drift for drivers. Follows 32 miles of existing highway ROW. Potential conflicts with future roadway expansion.	No effect.
Safety and Health	No effect.	No effect.	No effect.	No effect.
Noise				
Direct Effects	Noise generated from operation of construction equipment.	Noise generated from operation of construction equipment.	Noise generated from operation of construction equipment.	No effect.

Mitigation Measures for Potential Impacts

The HVTL route permit would require the implementation of mitigation measures to prevent or minimize both short-term and long-term impacts to resources from construction and operation of the Project. Additional mitigation measures were agreed to by the Applicants in the Application for a Route Permit, submitted in June 2008. Mitigation measures for each resource area are summarized in Table ES-3, below.

Irreversible and Irretrievable Commitment of Resources

Irreversible commitment of resources refers to the loss of future options for resource development or management, especially of nonrenewable resources such as cultural resources.

The construction of the Project would require the irretrievable commitment of non-recyclable building materials and fuel consumed by construction equipment. Under certain Route Alternatives and Route Segments, as identified in applicable sections of the DEIS, the Project would require the irreversible or irretrievable commitment of old growth forest, including the Ten Section area and Pike Bay Experimental Forest. In addition, Route Alternative 1 could result in the loss of the Orbanche uniflora species, for which an incidental take permit from the USFWS may be required.

Table ES-3: Summary of Mitigation Measures

Resource	Mitigation Measures
Aesthetics	Limits imposed in the HVTL permit for the removal of vegetation and trees.
	HVTL permit requirements for cleanup of construction waste.
	HVTL permit requirement to span water bodies when possible.
	ROW, access roads, temporary work spaces, and other private lands restoration required by the HVTL permit and as agreed upon in the vegetative management plan.
	Communication with landowners regarding specific pole placement.
	Use of uniform structure designs that blend into the natural environment (i.e., wood poles).
	Placement of structures at the maximum possible distance from trails, water bodies, and highways.
	Limit number and placement of construction staging areas. Possible use of Enbridge cleared right of way.
	Cross water bodies in the same location as existing transmission lines.
	Double-circuit the Project with existing transmission or distribution lines to the extent possible.
	Parallel existing transmission line and pipeline easement to the extent possible.
Air Quality and Climate	The height of the structures may be reduced, as feasible, to minimize impacts within areas of high scenic importance. Use of H-frame structures for the Mississippi River crossing near Ball Club would have a lower profile than single pole structures.
	Use of Best Management Practices (BMPs) to control fugitive dust during construction: monitor dust generation; operate vehicles at reduced speeds; and use of water and dust abatement methods.
	Maintain construction vehicles, limit idling time, and could use 15 ULSD in all on/off road construction equipment.
	Limit burning of vegetative and construction debris for the entire project. Use alternative methods such as chipping the debris for mulching, for use as a fuel source or other uses.
	No burning of slash or construction piles on or near the boundaries of the Leech Lake Reservation; in order to reduce the potential for Black Carbon and other emissions. Burning permit would be required from Leech Lake Band of Ojibwe.
Soil and Geology	Restoration of the natural landscape would commence shortly upon cessation of construction activities, as is typically required as a condition of the HVTL permits issued by the Commission.
	HVTL permit requirement to re-grade areas disturbed to construction to reflect topography existing before construction.
	Avoid disturbance of soils and excavation in steeply sloped areas.
	Implementation of Soil Erosion and Sediment Control Plan, required by the HVTL permit.
	Development of BMPs under a Storm Water Pollution Prevention Plan (SWPPP), including installation of silt fencing, straw bales or ditch blocks and/or covering bare soils with mulch, plastic sheeting, or fiber rolls to protect drainage ways and streams from sediment runoff from exposed soils.
	Restore compacted soils to their native state through tillage operations.
Limit setup and staging sites to previously disturbed areas.	

Resource	Mitigation Measures
	<p>Identification of wet organic soils through mapping and, if necessary on-site investigations and soil borings.</p> <p>To the extent practicable, complete construction in the wet organic soils when the ground is frozen.</p> <p>Develop procedures for the proper storage and disposal of all hazardous and non-hazardous wastes generated during construction.</p> <p>Use controlled staging areas for refueling and hazardous material loading/unloading.</p> <p>Revegetate all disturbed areas once construction is complete. Seed mixes could be specified based upon site characteristics and in accordance with regulatory permits.</p> <p>In the event that previously contaminated soils are discovered during construction, the Applicants could stop work immediately, contact the appropriate state or tribal agency, and consult with the agency with respect to an acceptable plan of action.</p>
Water Resources	<p>HVTL permit requirement to span all water bodies to the extent possible.</p> <p>Plant or seed non-agricultural areas disturbed by transmission line structures to prevent runoff. Ensure that native seed mixes from the plants already indigenous to the immediate area of disturbance are used for the seeding.</p> <p>HVTL permit could require the Project to co-locate with existing transmission facilities along certain segments of a permitted route.</p> <p>Development of BMPs under a SWPPP including location of structures and disturbed areas away from water bodies; location of fueling activities and fuel and chemical storage away from water bodies; installation of sediment and erosion control; use of turbidity control methods; spread topsoil and seed in a timely manner; avoid use of fertilizer, pesticides, or herbicides near water bodies; implement procedures to minimize and control inadvertent fluid returns during horizontal direction drilling (if used).</p> <p>Compensatory mitigation if required under the Section 404 permit could include the restoration, establishment, enhancement, or preservation of wetlands or other aquatic resources to off-set Project impacts.</p>
Floodplains	<p>HVTL permit requirement to return floodplain contours to their pre-construction profile if disturbed during construction.</p> <p>HVTL permit requirement to span all water bodies and associated floodplains to the extent possible.</p> <p>Plant or seed non-agricultural areas disturbed by transmission line structures to prevent runoff. Use native seed mixes from the indigenous plants and plant indigenous plants located in the immediate disturbed soil area; ensure seeding and/or plantings are done in a time congruent with seeding and growth of the area, not during a time that would preclude germination or rooting.</p> <p>Use construction techniques to minimize run-off into floodplains during construction.</p>
Wetlands	<p>HVTL permit requirement to span wetlands to the extent possible.</p> <p>Plant or seed non-agricultural areas disturbed by transmission line structures to prevent runoff. Use native seed mixes from the indigenous plants and plant indigenous plants located in the immediate disturbed soil area; ensure seeding and/or plantings are done in a time congruent with seeding and growth of the area, not during a time that would preclude germination or rooting.</p>

Resource	Mitigation Measures
	<p>Development of BMPs under a SWPPP, NPDES permit, License to Cross Public Waters permit, Public Waters work permit, and Section 10 permit, including location of fueling activities and fuel and chemical storage away from water bodies; installation of sediment and erosion control; use of turbidity control methods; spread topsoil and seed in a timely manner; avoid use of fertilizer, pesticides, or herbicides near wetlands; implement procedures to minimize and control inadvertent fluid returns during horizontal direction drilling (if used).</p> <p>Schedule construction during frozen ground conditions.</p> <p>Access wetlands through the shortest route resulting in the least amount of physical impact to the wetland during construction.</p> <p>Assemble structures on upland areas before transporting into wetlands.</p> <p>Use of construction mats and specially designed all terrain vehicles to minimize impacts within wetlands when construction during winter (frozen) months is not possible.</p> <p>Restore wetlands as required by the USACE St. Paul District to replace wetland functions and values lost due to regulated activities pursuant to Section 404 of the Clean Water Act and St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota, and in concert with other district policies and guidance.</p>
Biological Resources	<p>Reseed disturbed areas following construction with native species seed mix to restore native vegetation cover. Seed mix will be developed in conjunction with appropriate resource agencies (LLDRM, CNF, DNR) taking into consideration culturally important species.</p> <p>Develop a noxious weed management program, including a noxious weed and vegetation management plan.</p> <p>Conduct a field review of ROW and construction staging sites prior to construction to identify areas that contain noxious weeds and should be avoided.</p> <p>Power-wash or manually remove material from construction vehicles prior to the start of construction and if equipment has traveled from an area contaminated by noxious weeds to an uncontaminated area.</p> <p>Siting the Project within or adjacent to existing ROWs to minimize impacts to wildlife habitat.</p> <p>Limit clearing and maintenance of the ROW within previously forested areas to the extent practicable.</p> <p>Install marked transmission line shield wires to the extent practicable within major flyways.</p> <p>Develop an Avian Protection Plan (APP).</p>
Species of Special Concern	<p>Placement of the ROW within the 1,000-foot-wide route to avoid known species of special concern, active nesting locations, and active breeding locations.</p> <p>Conduct ROW clearing outside of the breeding season.</p> <p>Notify appropriate agencies if previously unknown nesting/breeding sites are identified during construction.</p> <p>An <i>Orabanche uniflora</i> Mitigation Plan will be developed if the Project Route is placed in close proximity of the known population(s).</p>
Cultural Resources	<p>Avoid identified archaeological and historic resources through adjustment of the ROW within the selected 1,000-foot-wide route.</p> <p>Vegetative restoration of the ROW and construction areas using local native ecotype species. Seed mix will be developed in conjunction with appropriate resource agencies (LLDRM, CNF, MnDNR) taking into consideration culturally important species.</p>

Resource	Mitigation Measures
	Implement BMPs for water resources (see above) to minimize potential effects to wild rice.
	Use of single pole structures within the city of Cass Lake to minimize visual and aesthetic impacts to the viewshed of historical properties.
Land Use	Co-locating the Project along existing ROWs, including highways, railways, existing transmission lines, and pipelines.
	Communicate with MnDNR LLDRM, and CNF to identify and avoid sensitive forested areas.
	Reseed state and federal forested land with a seed mix recommended by the appropriate agency's management. Seed mix will be developed in conjunction with appropriate resource agencies (LLDRM, CNF, MnDNR) taking into consideration culturally important species.
	Limit construction staging and lay-down areas to previously disturbed areas.
	Use the minimum necessary width and length for transmission line access roads.
	Communicate with private land owners regarding exact placement of structures and disturbed areas.
	Adjust conductor spans to avoid sensitive land use areas.
	Limit construction activities to the ROW, unless access permission is obtained from adjacent landowners.
Socioeconomics	Communicate with landowners regarding exact placement of structures and disturbed areas.
	Use the minimum necessary width and length for transmission line access roads.
	Limit construction activities to the ROW, unless access permission is obtained from adjacent landowners.
	Easement payments to landowners are required to compensate landowners for loss of use of the utility easement on their property.
	Co-locating the Project along existing ROWs, including highways, railways, existing transmission lines, and pipelines, to avoid crossing additional, undisturbed properties and affecting property values.
Environmental Justice	Communicate with private landowners regarding exact placement of structures and disturbed areas.

Resource	Mitigation Measures
	<p>To prevent long-term disruption to hunting and gathering resources, the HVTL permit would require restoration of the rights-of-way, temporary work spaces, access roads, and other lands affected by constructions. The HVTL permit could require the Applicants to work with the MnDNR, LLDRM, CNF, landowners, and local wildlife management programs to restore and maintain the rights-of-way to provide a useful and functional habitat for plants, nesting birds, small animals, and migrating animals to minimize habitat fragmentation.</p> <p>The Applicants could work with the LLDRM to allow them to collect and transplant (in whole or in part) traditionally important plants from the entire ROW.</p> <p>Opportunities could be provided to the LLDRM Plant Resource Department in order to conduct long-term management of portions of or the entire ROW through the LLR to reduce the occurrence of non-native invasive species and support traditionally important plants.</p> <p>Span water bodies, wetlands, and floodplains to the extent possible, to minimize effects on wild rice resources.</p>
Recreation and Tourism	<p>Co-locating the Project along existing ROWs, including highways, railways, existing transmission lines, and pipelines, to avoid previously undisturbed recreation areas and wildlife habitat.</p> <p>Communicate with private landowners and resource management agencies regarding exact placement of structures and disturbed areas.</p> <p>Placement of barriers and signs at or near road crossings to limit unauthorized off-highway vehicle (OHV) or other vehicle traffic on ROWs.</p> <p>Conduct construction at water access points during winter months when use of such areas for recreation tourism is minimal.</p> <p>Align the Project ROW perpendicular rather than parallel to existing trails to the extent practicable to minimize impacts to recreation trails.</p> <p>Post signs during construction to provide residents and visitors with advance notice of what recreational activities may be affected during construction.</p>
Agriculture	<p>HVTL permit required Agricultural Mitigation Plan.</p> <p>Communicate with private landowners regarding placement of structures and disturbed areas to minimize effects on farming operations.</p> <p>Co-locating the Project along existing ROWs, including highways, railways, existing transmission lines, and pipelines, to avoid previously undisturbed agricultural land.</p> <p>Use of a single pole structure for placement on agricultural land.</p> <p>Compensate landowners for crop damage and soil compaction that occurs during Project construction.</p> <p>HVTL permit requirement to restore ROW and disturbed areas, including restoration of compacted soils through tillage operations.</p>
Forestry	<p>Limits imposed in the HVTL permit for the removal of vegetation and trees.</p> <p>Limits imposed in the HVTL permit for the creation of temporary easements for access roads and construction/staging areas. The HVTL permit could require that these areas be selected to minimize tree removal.</p> <p>Restoration of previously forested land with native shrubs and grasses as identified in the vegetation management plan. Plant seedlings in temporary work areas.</p>

Resource	Mitigation Measures
	<p>Conduct construction activities on CNF lands in accordance with the Forest-Wide Management Directions, as provided in the 2004 Final Forest Plan.</p> <p>Offer timber harvested from the Project to the local community for use as firewood.</p>
Mining	No mitigation measures identified.
Community Services	No mitigation measures identified.
Utility Systems	<p>Proper maintenance, preventative maintenance, and selection of hardware for the transmission line.</p> <p>HVTL permit condition requiring the correction of interference to communication systems that the transmission line causes or creates.</p> <p>Modifying receiving antennae to correct radio interference.</p> <p>Detuning of transmission line structures if receiving antennae modifications do not eliminate interference with radio frequencies.</p> <p>Communicate with local radio broadcasting stations to confirm that blocking interference does not occur due to structure placement.</p> <p>Modification or replacement of antenna or amplifier for residents that experience TV signal interference.</p> <p>Reduction of AC interference on pipelines through reducing the impedance of the transmission structure grounds, grounding the pipeline in conjunction with de-couplers, burying gradient control wires along the pipeline or ground mats under aboveground facilities (such as at valves), and the use of dead fronts at test stations.</p> <p>Conduct computer modeling of AC interference to ensure that property mitigation is designed and installed prior to energizing the transmission line.</p> <p>Schedule planned service disruptions that are necessary during construction activities with the affected owners of existing transmission lines. Provide advance notice of service disruption to electric customers.</p> <p>Ensure that utility repair crews are present or on-call during construction activities to respond to unplanned incidents that may result in an interruption to electric service.</p>
Traffic and Transportation	<p>Construct transmission line in accordance with National Electric Safety Code (NESC) guidelines for the required clearances between transmission lines and transportation structures.</p> <p>HVTL permit requirement to comply with MnDOT and all applicable road authorities' management standard and policies, including written notice of construction to MnDOT and applicable road authorities.</p> <p>HVTL permit requirement to restore the ROW, temporary work spaces, access roads, abandoned ROW, and other lands affected during construction, including living snow fences.</p> <p>File a "Notice of Proposed Construction of Alteration" with the FAA and provide an opportunity for the FAA to comment about compatibility of the Project with airport operations.</p> <p>Obtain MnDOT and county permits as applicable for transmission line crossings of roadways. Use of ROW along the National Highway System requires approval of the Federal Highway Administration.</p> <p>Implement traffic control measures during construction, which could include flag persons, barriers, and flashing lights.</p> <p>Install temporary wood pole "guard structures" to safeguard the public and construction workers during removal of existing conductors or stringing of new overhead conductors over highways.</p>

Resource	Mitigation Measures
	<p>Grounding tracks and communication cables on existing rail lines to prevent interference.</p> <p>Use of taller structures where the Project crosses the railroad to increase clearance between passing trains and conductors.</p> <p>Consolidate the Project with existing transmission line to reduce the number of railroad crossings.</p>
Safety and Health	<p>Use BMPs to minimize the potential for spills or leaks from equipment during construction, including frequent inspections of equipment; requiring portable spill containment kits for construction equipment; ensuring that equipment operations are present at the nozzle at all times when fueling is in progress; and prohibiting the refueling of equipment in wetlands.</p> <p>Use of protective devices (e.g., breakers and relays) that would de-energize the transmission line in the event of an emergency.</p> <p>Use of fences at substations to prevent access.</p> <p>Construct the Project in accordance with NESC standards regarding clearance, grounding, utility crossing, strength of materials, and ROW widths.</p> <p>Ground metal buildings, fences, and other large, permanent conductive objects in close proximity or parallel to the line to prevent electric field discharge.</p> <p>Minimize the length of the transmission line that parallels or is co-located with distribution of local service conductors to minimize the potential for stray voltage.</p> <p>Educating local livestock operations about techniques to reduce the potential for insulated electric fences to pick up an induced charge from the transmission line.</p>
Noise	<p>HVTL permit requirement for the Project to meet Minnesota noise standards.</p> <p>Limit construction to daytime work hours.</p> <p>Equip heavy equipment with sound attenuation devices, such as mufflers.</p> <p>Minimize noise impacts from substation through design, including setbacks from sensitive noise receptors, layout and landscaping choices, and use of low noise transformers.</p>