

Environmental Assessment

Conversion of Land and Water Conservation Fund Lands Jay Cooke State Park

15 Line Reroute Project Carlton County, Minnesota

Submitted by:
Minnesota Department of Natural Resources and ALLETE/Minnesota Power

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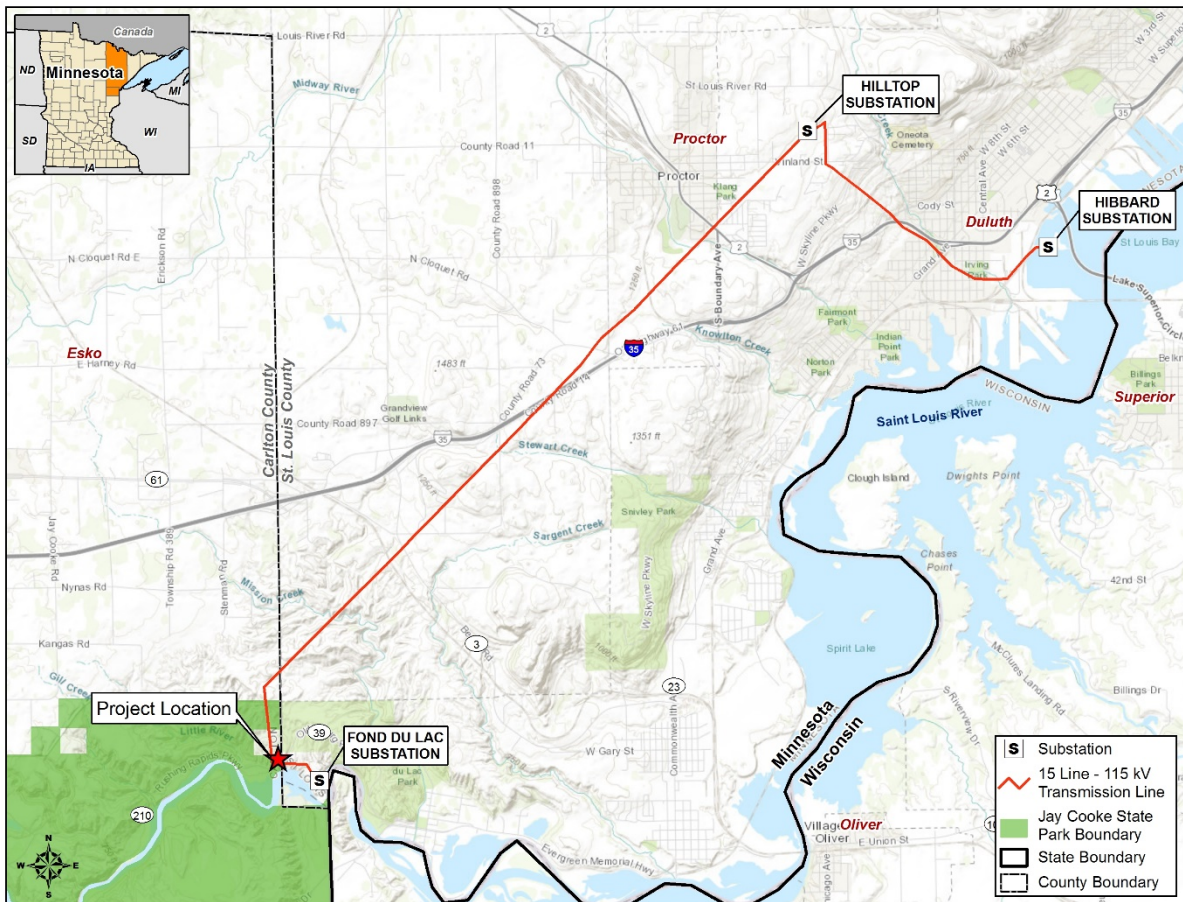
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1.0 CHAPTER 1 – PURPOSE, NEED, AND BACKGROUND

1.1 PROJECT DESCRIPTION

Minnesota Power (MP), an ALLETE company, owns and operates its 15 Line, a 115 kilovolt (kV) high voltage transmission line (HVTL), in the Duluth area spanning between its Hibbard, Hilltop, and Fond du Lac substations. MP is planning to reroute a 2,178-foot segment of its existing 15 Line near Fond du Lac Dam in St. Louis and Carlton counties, Minnesota. This project is named the 15 Line Reroute Project. A small portion of the 15 Line Reroute Project will be located on Jay Cooke State Park land, covering an area of up to 575-feet-long by 160-feet-wide, or total area of 2.13 acres as referenced in Maps 1 and 2 in Appendix A (Project). Figure 1 below is an overview map that shows the general location of MP’s 15 Line 115 kV HVTL and the proposed Project location. A comprehensive set of maps is included in Appendix A.

FIGURE 1: OVERVIEW MAP



1.2 PURPOSE AND NEED

The purpose and need of the proposed 2,178-foot reroute of MP’s existing 15 Line is to address concerns of failing slope conditions near the St. Louis River and State Highway 210 corridor. The erosion and slope failure pose a reliability threat to the transmission line at this location and a safety risk. In a letter dated

June 19, 2017, the Minnesota Department of Transportation (MnDOT) formally requested MP relocate this segment of its 15 Line where it crosses the State Highway 210 corridor in connection with road repairs associated with storm damage that has occurred. The MnDOT cited in the letter that the steep grade at MP's crossing presents a risk to travelers. A copy of the MnDOT letter is included in Appendix B.

FIGURE 2: PHOTOGRAPH OF CURRENT ERODING SLOPES



1.3 BACKGROUND

As previously stated, a portion of the proposed reroute segment will occupy an area approximately 575-foot-long by 160-foot-wide of Jay Cooke State Park land, covering a total area of 2.13 acres. This acreage will be converted to HVTL right-of-way. Jay Cooke State Park has received grant assistance from the Land and Water Conservation Fund (LWCF or LAWCON) to improve recreation within the Park. The LWCF was established by Congress in 1964 to safeguard natural areas, water resources and cultural heritage, and to provide recreation opportunities in the form of parks, protected forests, and wildlife areas. Pursuant to

Section 6(f)(3) of the LWCF Act, lands acquired for public outdoor recreation shall not be wholly or partly converted to other than public outdoor recreation uses without the approval of the National Park Service (NPS). LAWCON Section 6(f) stipulates that any land developed or improved with LAWCON funds cannot be converted to other than outdoor recreational use unless replacement land of at least equal fair market value and seasonably equivalent usefulness is provided.

The conversion of 2.13 acres of Jay Cooke State Park land requires approval from the NPS in accordance with LWCF Act of 1965. The Minnesota Department of Natural Resources (DNR) administers this process on behalf of the State of Minnesota. It is the responsibility of the State, as primary grant recipient, to ensure compliance with all terms and conditions of the grant agreement and requirements set forth in LWCF State Assistance Program, Federal Financial Assistance Manual, Volume 69.

1.4 DECISION REQUIREMENTS

MP is working with the Minnesota DNR to obtain NPS approval to convert the 2.13 acres of Jay Cooke State Park land needed to reroute a segment of its 15 Line. As part of this process, an Environmental Assessment (EA) must be prepared in accordance with the National Environmental Policy Act and submitted to the NPS. The scope of the EA only includes the portion of Jay Cooke State Park land potentially affected by the Project. The NPS will need to make two decisions based on the facts and recommendations contained in this EA document:

- 1) select an alternative; and
- 2) determine if the selected alternative is a major federal action significantly affecting the quality of human environment, thus requiring the preparation of an Environmental Impact Statement.

1.5 FAIR MARKET VALUE

The portion of the Project located within the Jay Cooke State Park parcel covers 2.13 acres. As depicted in Map 3 of Appendix A, MP initially evaluated a reroute of its 15 Line in a southeast to northwest direction on parcels owned by the City of Duluth and Carlton County. As part of that process, MP received appraisals for both the City of Duluth and Carlton County properties. Both were completed within the last four months (since February 2018) with the following results:

- City of Duluth Parcel: Appraisal completed by Ramsland & Vigen, Inc by Mr. Battuello, valued the park property at \$1,912.88 - \$1,913 per acre.
- Carlton County Parcel: The County Land Commissioner, with approval from the County Board, valued the property at \$2,300 per acre with a timber value of \$2,745. That would be an average of $\$2300 + \$2745 = \$5045 / 2 = \2522.50 per acre.

Based on these two recent and relevant appraisals on adjacent properties, the average land value would be calculated as: $\$1913 + \$2522.50 = \$4435.50 / 2 = \2217.75 per acre. MP will impact 2.13 acres of land within the Park, at a value of: $\$2217.75 \times 2.13 = \$4723.81 \sim \$4724.00$. As such, the fair market value for the portion of the Project within Jay Cooke State Park and subject to the LAWCON process is \$4724.00.

On June 8, 2018, MP submitted a waiver valuation memo to Joe Hiller, Grants Specialist Coordinator of the Minnesota DNR providing the above-referenced fair market valuation calculations and requesting comments in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies Act

of 1970 guidance provided in the NPS LWCF State Assistance Program Federal Financial Assistance Manual, Volume 69 (LWCF Manual). On June 18, 2018, Mr. Hiller confirmed that MP's waiver valuation memo arrived and validated that the memo meets the conversion requirement cited in the LWCF Manual. A copy of this correspondence is provided in Appendix B.

1.6 PROJECT SCHEDULE

MP plans to complete construction of the Project late-summer and fall of 2018 after NPS approval has been issued under this process, and after all other necessary permits and approvals are obtained.

1.7 ENGINEERING AND OPERATIONAL DESIGN

1.7.1 Proposed Facilities

The proposed 15 Line structure on the Jay Cooke State Park tract is a direct embedded wood pole H-frame tangent structure (see Structure Number 7 on Map 3), which consists of one guyed wood pole angle structures and suspension insulators. Transmission wires will include three 636 kcmil ACSR (24/7) codeword "Rook" conductors, one 0.528" diameter AlumaCore Optical Ground Wire, and one 3/8-inch diameter 7-strand High Strength Steel shield wire.

Structure Number 7 will be constructed to a height of approximately 60 feet above ground, and the spans adjacent to these structures will range from 300 to 500 feet. A preliminary engineering drawing and typical photograph of this structure type is provided in Figures 3 and 4 below. A preliminary plan and profile alignment sheet of the proposed Project are provided in Appendix C. The Project plan and profile alignment is subject to change slightly, pending finalization of engineering plans.

FIGURE 3: ENGINEERING DRAWING OF H-FRAME TANGENT STRUCTURES

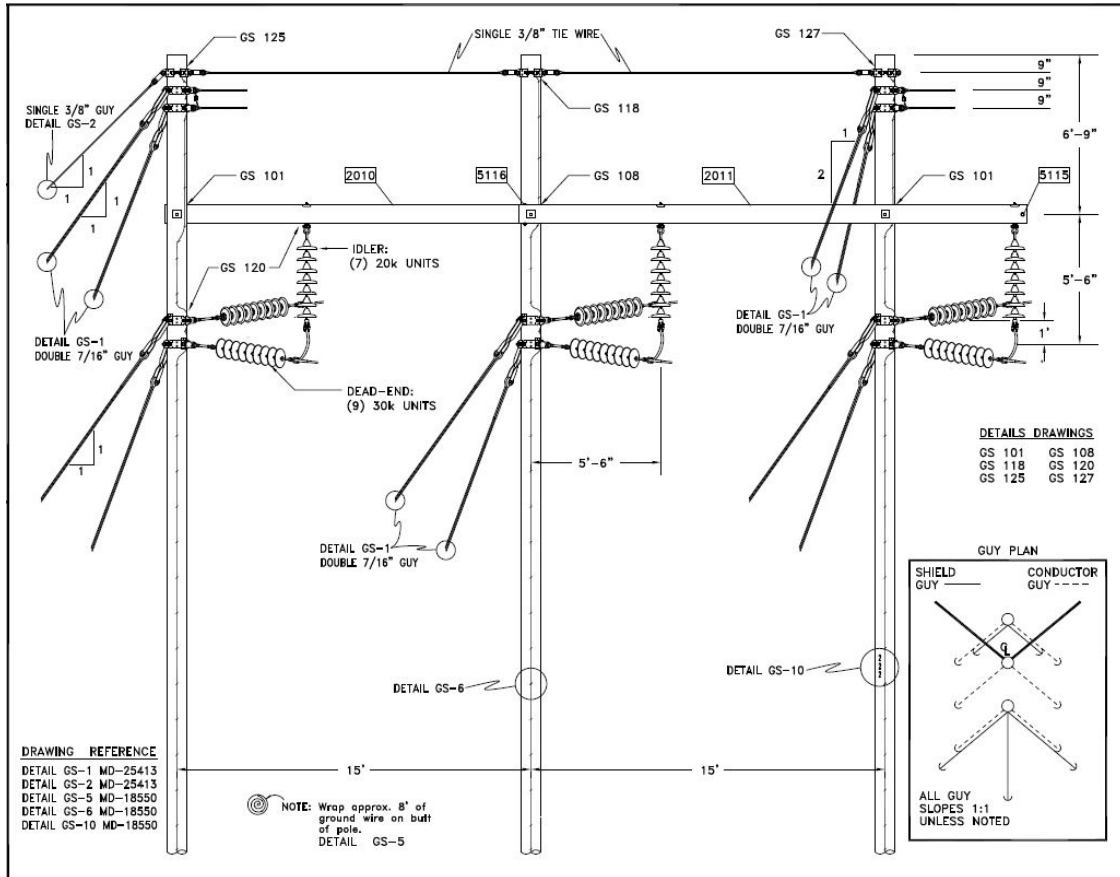


FIGURE 4: PHOTOGRAPH OF H-FRAME TANGENT STRUCTURES



1.7.2 Right-of-Way

The proposed Project will occupy up to a 160-foot-wide right-of-way for the entire length of the project, including the small portion of the reroute segment located on Jay Cooke State Park property. The portion of the Project on Jay Cooke State Park will occupy an area of up to 575-feet-long by 160-feet-wide to allow for installation of one support structure and a spanned 115 kV transmission line, totaling 2.13 acres. The state park portion of the Project is located in the southeast $\frac{1}{4}$ of Section 1 in Township 48 North, Range 15 West, Carlton County, Minnesota. The remaining portion of the proposed Project crosses ALLETE/MP and Carlton County property. The maps included in Appendix A depict the proposed right-of-way dimensions.

1.7.3 Access

MP is in the process of evaluating access to the proposed right-of-way corridor. MP generally will obtain access via existing public roads and trails that run parallel or perpendicular to the HVTL right-of-way. Where necessary to accommodate the heavy equipment used in construction, including cranes, cement trucks and hole drilling equipment, existing access roads may be improved, or new access roads may be constructed. No new access roads will be constructed on Jay Cooke State Park land; however, MP will use an existing two-track road along its existing right-of-way that crosses Park land from the south as depicted on Map 2 in Appendix A (see road intersecting with proposed Structure Number 7). As necessary, MP will coordinate access-related activities with the affected property owner(s) and/or state and local highway departments as appropriate.

1.7.4 Transmission Construction Procedures

MP will begin construction after appropriate federal, state, and local approvals are obtained, property and rights-of-way are acquired, and a final engineering design is completed. The precise timing of construction will account for permit and approval conditions, procurement constraints, system loading issues, and available workforce.

MP's construction process will follow standard construction and mitigation practices, including best management practices that have been developed from experience with past projects. These practices address staging, erecting HVTL structures, and stringing HVTLs. Construction and mitigation practices to minimize impacts will be developed by MP based on the proposed schedule for activities, permit requirements, maintenance guidelines, inspection procedures, terrain, and other factors. In some cases, activities or schedules may be modified to minimize impacts on sensitive environmental features.

HVTL structures are generally designed for installation at existing grades. However, some sloped work areas may need to be graded or filled in order to establish a more level work surface for structure installation. If the landowner permits, it is preferred to leave the leveled areas and working pads in place for use in future maintenance activities, if any. If permission is not obtained, the site is graded back to its original condition to the extent possible and imported fill is removed.

Typical construction equipment that will be used on a Project may consist of tree removal equipment, line construction equipment, stringing equipment, and general construction equipment on rubber tires or tracks, as appropriate. The equipment and materials necessary to construct the new HVTL facilities will be stored at off-site staging areas until they are needed for the Project. During construction, temporary staging areas may be utilized to store materials and/or equipment in the Project vicinity.

These areas will typically be selected for their location, access, security, and ability to efficiently and safely warehouse supplies. No staging areas will be located on Jay Cooke State Park land beyond the 575-foot-long by 160-foot-wide workspace depicted on maps in Appendix A.

Pole structure installation first begins by moving them from the staging areas and delivering them to a staked location. The poles are typically staged within the right-of-way until the pole is set. Depending on site conditions, structures may be framed on the ground and lifted into place, or the poles may be set first and then bracing and hardware attached.

Structure Number 7 will be direct embedded and the area around the poles will be backfilled with crushed rock and/or soil. Guy wires will be anchored using screw anchors, cross plate anchors, or rock anchors depending on the soil conditions encountered. After the structure has been assembled, set, and secured, conductors will be installed by establishing stringing setup areas along the route. The conductors will then be pulled with a rope lead that connects to each structure through dollies attached at the insulator locations.

1.7.5 Restoration Procedures

MP will attempt to limit ground disturbance during construction wherever possible; however, disturbance will occur during the normal course of work. MP will restore disturbed areas to their original contours to the extent practicable. In areas of ground disturbance, MP will take measures to reestablish vegetation and control erosion until disturbed areas have stabilized. Commonly used methods to control soil erosion and assist in reestablishing vegetation include soil disturbance minimization during construction, seed and mulch application to disturbed areas, erosion control blanket installation, and silt fence installation at areas prone to erosion event (e.g., wetlands, waterbodies, roads). To avoid adversely impacting reptile and bird species, MP will not use plastic mesh erosion control materials.

These erosion control and vegetation establishment practices are regularly used in construction projects and are referenced in the construction permit plans. These construction techniques typically minimize long-term impacts that may result from the Project. The Minnesota Noxious Weed Law (Minnesota Statutes Section 18.75-18.91) defines a noxious weed as an annual, biennial, or perennial plant that the Commissioner of Agriculture designates to be injurious to the public health, the environment, public roads, crops, livestock, or other property. The Minnesota Department of Agriculture's Noxious & Invasive Weed Program assists local governments and landowners with resources for managing noxious and invasive weeds throughout Minnesota. MP will attempt to limit the spread of noxious and invasive weeds by cleaning construction equipment before it enters the construction work area and using only invasive-free mulches, topsoil, and seed mixes. Permanent vegetation will be established in areas disturbed within the construction work area except in standing water wetlands. Seed used will be purchased on a "Pure Live Seed" basis for seeding revegetation areas. The seed tags on the seed sacks will also certify that the seed is "Noxious Weed Free."

MP may use both herbicides and/or mechanical methods to control the spread of noxious weeds. All herbicides used by MP are approved by the U.S. Environmental Protection Agency and the State of Minnesota Department of Agriculture. These herbicides are applied by commercial pesticide applicators that are Licensed by the Minnesota Department of Agriculture.

1.7.6 Maintenance Procedures

MP designs its HVTLs to operate for decades and they typically require only moderate maintenance, particularly in the first few years of operation. The estimated service life of a HVTL built today is approximately 40 years. However, HVTLs are seldom completely retired. Transmission infrastructure has very few mechanical elements and is built to withstand weather extremes that are normally encountered. With the exception of severe weather such as tornadoes and heavy ice storms, HVTLs rarely fail. HVTLs are automatically taken out of service by the operation of protective relaying equipment when a fault is sensed on the system. Such interruptions are usually only momentary. Scheduled maintenance outages are also infrequent. As a result, the average annual availability of transmission infrastructure exceeds 90 percent.

2.0 CHAPTER 2 - DESCRIPTION OF ALTERNATIVES

This section describes and compares the alternatives considered by MP to meet the Project needs. Three alternatives were considered: Alternative A the Proposed Action; Alternative B Reroute Option; and Alternative C No Action Option. Alternative A and Alternative B are shown in Appendix A, Map 3.

2.1 ALTERNATIVE A – PROPOSED REROUTE

MP's proposed 15 Line alignment generally parallels its existing 15 line for the length of the reroute, crosses land largely owned by MP/ALLETE, and avoids crossing City of Duluth property. The City of Duluth rejected an application for a Special Use Permit to cross the City of Duluth land tract, as described in Section 2.2 below. As such, MP has identified Alternative A as its preferred route. Note that collocating or widening the existing 15 Line corridor was not feasible due to the eroding slopes and constructability; therefore, the Proposed Route is sited as close to the ALLETE parcel boundary as possible.

2.2 ALTERNATIVE B – REROUTE OPTION

In March 2018, MP initially proposed a reroute option travelling through the City of Duluth property running northwest and perpendicular to the currently proposed reroute as depicted in Figure 3. MP staff initiated a Special Use Permit application process and submitted it to the City of Duluth Planning and Zoning Commission. After receipt of the application, the City expressed its resistance to relocating the segment its property and strongly urged MP to identify an alternative route to that proposed in the Special Use Permit application. As a result of the City of Duluth's expressed opposition to the route submitted in the Special Use Permit application, MP developed the proposed reroute identified in section 2.1 avoiding permanent impacts to the City of Duluth land tract.

2.3 ALTERNATIVE C – NO ACTION OPTION

The No Action Option alternative involves not constructing the proposed reroute and therefore, would avoid any impacts identified in this EA. However, this alternative does not satisfy the need to address reliability risks associated with the evident erosion and slope failure at the steep grade adjacent to State Highway 210. Further, this alternative does not address the MnDOT request to relocate the HVTL at State Highway 210. Therefore, MP does not support the No Action Option alternative.

3.0 CHAPTER 3 - AFFECTED ENVIRONMENT

3.1 PHYSICAL AND BIOLOGICAL ENVIRONMENT

Jay Cooke State Park was established in 1915 when the St. Louis Power Company donated 2,350 acres of land. In 1945, the state purchased additional land and since then, other sections have been added giving Jay Cooke State Park its present size of 8,125 acres. The Park is situated on both sides of an approximately seven-mile stretch of the St. Louis River in northeastern Carlton County. The rugged land formations of Jay Cooke State Park enhance the beauty of the hardwood forests. The water-eroded gorge, steep valleys, and massive rock formations are seen throughout the park. During parts of the year, the water of the St. Louis River thunders over slabs of exposed rock. During other times, it slows to a gentle trickle.

3.1.1 Geology

The bedrock geology of the Park is slate, greywacke and red clay¹. Beds of slate were formed from original layers of mud and sand, which were deposited in a sea that occupied this area 1.9 billion years ago. These thick deposits compacted into shale, from mud, and greywacke, from sand.

Heat, pressure, and earth movements transformed the deeply buried shale into slate. Underground pressure from the south caused the slate and greywacke beds to fold and fracture, giving the tilted character of these rocks seen all along the St. Louis River. Later, about 1.1 billion years ago, molten rock was forced into fractures in the beds and when they cooled, these intrusions formed dikes which can be seen along the river bed today. The St. Louis River, Lake Superior's largest U. S. tributary, has exposed the bedrock in many places.

The red clay and silt that overlies the bedrock was deposited at the end of the Ice age (about 10,000 years ago) in a great, ice-dammed lake (Glacial Lake Duluth), the "ancestor" of modern Lake Superior.

3.1.2 Listed, Proposed, and Candidate Species

Federally Listed Species

The U.S. Fish and Wildlife Service (USFWS) lists four species with potential to occur in the Project Area, including portions of the reroute in both Carlton and St. Louis Counties: piping plover as endangered; Canada lynx as threatened; gray wolf as threatened; and northern long-eared bat as threatened². Note that the entire reroute was considered for informal Section 7 consultation with the USFWS due to the connected action outside Jay Cooke State Park.

Piping Plover (*Charadrius melodus*)

The Piping Plover - Great Lakes Population inhabits beaches and shorelines of the Great Lakes. The habitat within Jay Cooke State Park, and specifically the Project area, is comprised mainly of forest and is located approximately 5 miles from the nearest bays of Lake Superior. Furthermore, a review of the

¹ MnDNR, Accessed June 19, 2018. https://www.dnr.state.mn.us/state_parks/park.html?id=spk00187#information

² USFWS, Accessed June 9, 2018. <https://ecos.fws.gov/ipac/>

Minnesota Department of Natural Resources (DNR) Natural Heritage Information System (NHIS) data did not identify any occurrences of piping plover within 1 mile of the Project area.

Canada Lynx (*Lynx canadensis*)

The Canada lynx is a medium-size cat that generally inhabits moist boreal forest that have cold, snowy winters and a high-density snowshoe hare prey base. The predominant vegetation of boreal forest is conifer trees, primarily species of spruce (*Picea* spp.) and fir (*Abies* spp.). In the contiguous United States, the boreal forest type transitions to deciduous temperate forest in the Northeast and Great Lakes, and to subalpine forest in the west. Individual lynx maintains large home ranges generally between 12 to 83 square miles.

The Canada lynx is considered abundant in Canada and Alaska and occurs in 95 percent of the species' historic range. However, in the southern portion of its range (i.e., the contiguous United States) populations were weakened by the fur trade, and the species was listed as federally listed threatened in the United States in 2000. The USFWS has identified the permanent United States population as a distinct population segment and has identified priority areas for conservation. Threats to the distinct population segment in the United States include anthropogenic development, mining, silvicultural management practices, grazing, trapping, predator control, roads, climate change, and habitat loss and fragmentation.

Gray Wolf (*Canis lupis*)

The gray wolf is the largest of the wild dog species and is found in a variety of habitats throughout North America. Gray wolves prey primarily on large ungulates, including white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), moose (*Alces alces*), bison (*Bison bison*), and caribou (*Rangifer tarandus*), depending on location. They will occasionally take smaller prey, including beaver (*Castor canadensis*), insects, various small mammals, and domestic animals. Additionally, wolves will usurp carcasses and scavenge carrion opportunistically from kills made by other carnivores.

A habitat generalist, the gray wolf originally occupied most habitat types in North America. They show no preference for one cover type over another and successfully utilize alpine, forest, grassland, shrubland, and woodland habitats across their range. Once thought to require wilderness areas with little to no human disturbance, recent range expansions have demonstrated the species' ability to tolerate higher rates of anthropogenic development than previously thought. Given abundant prey and low rates of human-caused mortality, wolves can survive in proximity to human-dominated environments.

The gray wolf population in the United States had been extirpated throughout much of its natural range due to the depletion of wild prey populations by early European settlers and subsequent widespread predator control programs. Shooting, poisoning, and trapping in conjunction with bounties were promoted by government agencies to combat increasing livestock depredation by wolves throughout the 19th and 20th centuries. Furthermore, logging and the conversion of forested wildlands to agricultural uses significantly reduced wolf habitat. Current threats to the species include human-caused mortality (e.g., illegal shooting, competition with humans over livestock) and continued habitat loss due to fragmentation.

Northern Long-eared Bat (*Myotis septentrionalis*)

The range of the northern long-eared bat stretches across much of the eastern and Midwestern United States. During summer, northern long-eared bats roost singly or in colonies under bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places such as caves and mines. This species is thought to be opportunistic in selecting roosts, utilizing tree species based on the tree's ability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures such as barns and sheds. In winter, northern long-eared bats utilize caves and mines as hibernacula.

The northern long-eared bat was listed as a federally threatened species in May 2015, with an interim 4(d) rule; effective February 16, 2016, the USFWS finalized the 4(d) rule. A 4(d) rule may only be applied to species listed as threatened, and is a tool periodically utilized by the USFWS to allow for flexibility in Endangered Species Act (ESA) implementation. The rule allows the USFWS to tailor take restrictions to those that make the most sense for protecting and managing at-risk species, and directs the USFWS to issue regulations considered "necessary and advisable to provide for the conservation of threatened species."

Per the final 4(d) rule, incidental take as a result of Project activities is not prohibited provided:

1. Known roost trees and trees within 150 feet of the known roost are not cleared between June 1 and July 31; and
2. Tree clearing is not conducted within 0.25 mile of a known hibernaculum at any time of year.

Merjent, Inc. (Merjent), reviewed on behalf of MP the Minnesota DNR NHIS rare features database to identify the presence of maternity roost trees or hibernacula in the vicinity of the Project. The NHIS review confirmed the absence of known hibernacula within 0.25 mile and the absence of known roost trees within 150 feet from the Project area.

Minnesota State Listed Species

The Minnesota NHIS database was reviewed to determine if there are any records of threatened and endangered species known to occur within or near the Project area. Merjent has a license agreement with the DNR for the NHIS rare features data. Merjent reviewed its licensed copy of the database, current as of April 20, 2018, and identified 23 NHIS records within Jay Cooke State Park, including 12 records of seven species of vascular plants, four records of mammals, one records of mollusk, one records of insect, three records of terrestrial communities, and two ecological records associated with geology. Of these records, nine are within one mile of the Proposed Action and none are within the planned utility corridor itself.

3.1.3 Other Wildlife Species

Jay Cooke State Park is inhabited by 46 species of mammals and is an important wintering area for white-tailed deer. Black bears, wolf packs, and coyotes have been observed within the Park. The pileated woodpecker, northern harrier, and great blue heron are just a few of the 173 species of birds recorded nesting or feeding in the Park. Additionally, sixteen species of reptiles and amphibians are found in Jay Cooke State Park.

3.2 WATER FEATURES

3.2.1 Waterbodies

As previously mentioned, the St. Louis River bisects Jay Cooke State Park generally in an east to west direction. This River is designated as a state water trail, Minnesota Public Watercourse, and United States Army Corps of Engineers (USACE) Section 10 navigable waterbody. There are several other waterbodies in the Park including a couple trout streams, all of which are tributaries to the St. Louis River.

3.2.2 Wetlands

Based on National Wetlands Inventory (NWI) data, wetlands within Jay Cooke State Park generally occur in the basin of the St. Louis River; there are few isolated wetlands that are not associated with this river system. Field delineations of wetlands in the Project corridor were delineated during June 2018 and are discussed in Chapter 5.2.2. A copy of the field delineation report is included in Appendix D.

3.2.3 Floodplain

Based on Federal Emergency Management Agency (FEMA) firmette panels (1988), floodplains within Jay Cooke State Park are generally associated with the St. Louis River. The 100-year floodplain associated with this river is south of Highway 210, which is south of the Proposed Action.

3.3 LAND USE

Land uses at Jay Cooke State Park include natural resource conservation and both active and passive outdoor recreation. Recreational opportunities at the Park include biking, hiking, horseback riding, wildlife watching, picnicking, canoeing, camping, fishing, cross-country skiing, and snowmobiling.³ The Park maintains a connection to the Willard Munger State Trail via the Superior Hiking trail as well as several miles of trails for summer use including: 50 miles of hiking trails; 1.8 miles of self-guided trails; and, 8 miles of paved biking trail, 13 miles of mountain biking trails, and 6 miles of horseback riding trails. During the winter season, the Park maintains 32 miles of groomed cross-country skiing trails and 0.9 mile of snowmobile trails (serves as the interconnect with the Willard Munger State Trail), and 6.8 miles of snowshoe trails. Camping and lodging facilities of the Park include 79 drive-in sites, 21 electric camp sites, 4 backpack sites, 4 walk-in sites, 2 large-group camps that accommodate up to 25 people each, and 5 year-round cabins.⁴

3.4 CULTURAL RESOURCES

As previously stated, Jay Cooke State Park received federal funds from the NPS-administered LWCF. Therefore, the portion of the project that crosses Jay Cooke State Park is subject to review under Section 106 of the National Historic Preservation Act (NHPA). MP sponsored an archaeological review performed by Merjent of the project portion of that crosses Jay Cooke State Park. The review consisted of archival research of existing site forms and previous inventory reports on file at the Minnesota State Historic Preservation Office (SHPO) and the Consultant Portal maintained by the Office of the State Archaeologist.

³ MnDNR, accessed June 19, 2018. https://www.dnr.state.mn.us/state_parks/park.html?id=spk00187#homepage

⁴ MnDNR, accessed June 19, 2018. https://www.dnr.state.mn.us/state_parks/park.html?id=spk00187#overnight_facilities

Merjent archaeologists also reviewed 19th century maps published by the General Land Office. Merjent archaeologists conducted pedestrian reconnaissance and shovel testing of an approximately 3.6-acre area on Jay Cooke State Park on May 17, 2018. The slightly larger survey area encompassed the proposed right-of-way within Jay Cooke State Park and extended south to the existing 15 Line right-of-way. In general, the topography sloped dramatically downward on either side of a north-south trending ridgeline, which was subject to five shovel tests. No architectural or archaeological properties were identified within the Project area during the archaeological literature and records review or the Phase I reconnaissance survey.

Merjent prepared a report in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Code of Federal Regulations [CFR] 44716), the SHPO Manual for Archaeological Projects in Minnesota (Anfinson 2005), and the State Archaeologist's Manual for Archaeological Projects in Minnesota (Anfinson 2011). The report includes:

- results of archaeological literature and records review;
- field and analytic methods and National Register of Historic Places criteria for evaluation (36 CFR 60.4); and
- summary and results of the field investigations.

On June 13, 2018, MP submitted the Phase 1 Archaeological Inventory report for the Jay Cooke State Park portion of the project to Mr. Joe Hiller, Minnesota DNR, with the recommendation that the project, as proposed, would not present an adverse effect to any historic property. On June 15, 2018, Mr. Hiller submitted the report seeking concurrence with the aforementioned recommendation from the Minnesota SHPO in accordance with Section 106 of the NHPA. On June 15, 2018, the enclosed report was also provided to Mr. David Radford (Jay Cooke State Park Archaeologist) and to Ms. Jill Hoppe (Fond du Lac Band of Lake Superior Chippewa Tribal Historic Preservation Officer). The Minnesota DNR is also consulting the Minnesota SHPO to obtain concurrence that the project would not present an adverse effect to any historic property.

Copies of the above referenced Section 106 National Historic Preservation Act correspondences are provided in Appendix B. The Phase 1 Archaeological Inventory for the Jay Cooke State Park tract is included as Appendix E.

3.5 PALEONTOLOGICAL RESOURCES

The project crossed areas where bedrock may be at the surface or near the surface, and common marine invertebrate fossils could be present in shallow bedrock. Pleistocene-age megafauna remains, such as woolly mammoths or mastodon, also could be found in the glacial sediments overlying bedrock; however, these remains are very rare.

3.6 PUBLIC HEALTH AND SAFETY

3.6.1 Electric and Magnetic Fields

The term electromagnetic fields (EMF) refer to electric and magnetic fields that are coupled together, such as in high frequency radiating fields. For the lower frequencies associated with power lines (referred to as "extremely low frequencies" (ELF)), EMF should be separated into electric fields (EFs) and magnetic fields (MFs), measured in kilovolts per meter (kV/m) and milliGauss (mG), respectively. These fields are dependent on the voltage of a transmission line (EFs) and current carried by a transmission line (MFs).

The intensity of the electric field is proportional to the voltage of the line, and the intensity of the magnetic field is proportional to the current flow through the conductors. Transmission lines operate at a power frequency of 60 hertz (cycles per second).

Electric Fields

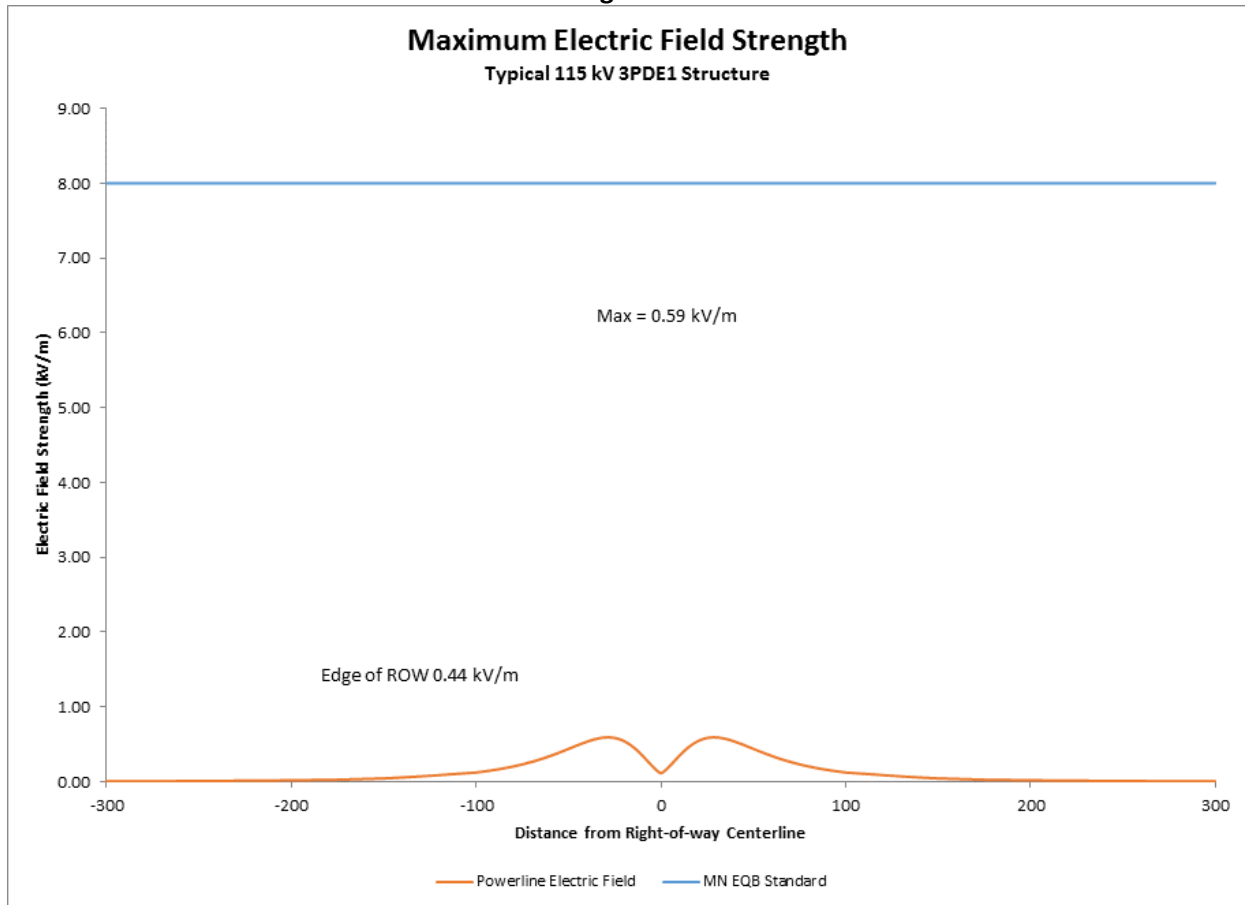
There are no federal or State of Minnesota regulations pertaining to transmission line EFs. In Minnesota, the Minnesota Public Utility Commission has developed a standard of a maximum electric field limit of 8 kV per meter measured at 1 meter above the ground. The standard was designed to prevent serious hazards from shocks when touching large objects parked under AC transmission lines of 500 kV or greater.

Table 1 provides the EFs at maximum conductor voltage for the proposed Project. The EF calculations are also shown graphically in Figure 5. Maximum conductor voltage is defined as the nominal voltage plus ten percent. This is generally an emergency condition, and MP typically operates its transmission system between 101 percent and 104 percent of nominal voltage under normal conditions. Due to the conductor configuration of the single circuit 115 kV 3 Pole Dead End type structure, the maximum EF for this configuration actually occurs at approximately 28 feet from the centerline of the ROW. The maximum EF was calculated to be 0.59 kV/m at one meter above ground.

Table 1
Calculated Electric Fields (kV/m) for Proposed 115 kV Transmission Line Designs
(One meter (3.28 feet) above ground)

Structure Type	Maximum Operating Voltage (kV)	Distance to Proposed Centerline (feet)										
		300	200	100	50	25	Max	25	50	100	200	300
115 kV Wood Pole H-Frame Tangent Structure or 3-Pole Dead End	126.5	0.01	0.02	0.13	0.44	0.59	0.59	0.59	0.44	0.13	0.02	0.01

Figure 5



Magnetic Fields

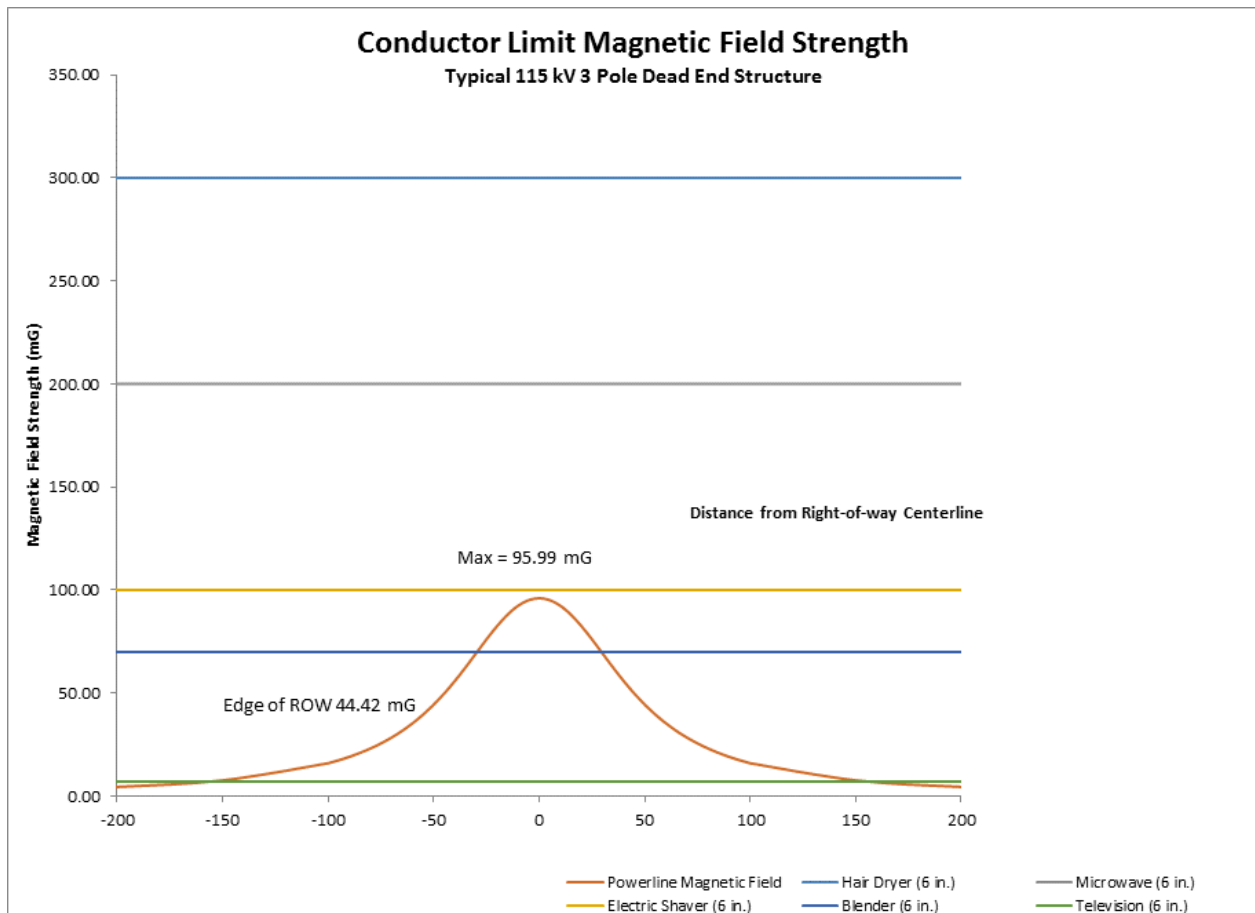
There are no federal or State of Minnesota regulations pertaining to MF exposure. The magnetic field profiles around the proposed HVTL for each structure and conductor configuration being considered for the Project is shown in Table 2. Magnetic fields were calculated at the conductor's thermal limit based on the design of the HVTL. The peak magnetic field values are calculated at a point directly under the HVTL and where the conductor is closest to the ground. The same method is used to calculate the magnetic field at the edge of the right-of-way. The magnetic field profile data show that magnetic field levels decrease rapidly as the distance from the centerline increases.

Due to the conductor configuration of the single circuit 115 kV 3-Pole dead end type structure, the peak MF for this configuration actually occurs at the centerline of the ROW. This peak MF was calculated to be 95.99 mG under the conductor thermal limit condition. Because the actual power flow on a transmission line could potentially vary widely throughout the day depending on electric demand, the actual MF level could also vary widely from hour to hour. In any case, the typical loading of the transmission line would be far below the thermal limit of the line and should remain at or below the expected peak loading for the foreseeable future, resulting in typical MFs well below those indicated in Table 2. The magnetic field calculations are also shown graphically in Figure 6.

Table 2
Calculated Magnetic Fields (mG) for Proposed 115 kV Transmission Line Designs
(One meter (3.28 feet) above ground)

Structure Type	Line Current (Amps)	Distance to Proposed Centerline (feet)										
		300	200	100	50	25	Max	25	50	100	200	300
115 kV Wood Pole H-Frame Tangent Structure or 3-Pole Dead End	1074.4	2.00	4.42	15.93	44.42	76.04	95.99	76.04	44.42	15.93	4.42	2.00

Figure 6



3.6.2 Stray Voltage

Stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings, such as barns and milking parlors, and can occur on the electric service entrances to structures from distribution lines, not HVTLs. HVTLs do not, by themselves, create stray voltage because they do not connect to businesses or residences. HVTLs, however, can induce stray voltage on a distribution circuit that is parallel to and immediately under the HVTL. There are no distribution circuits near the project area.

4.0 CHAPTER 4 - ENVIRONMENTAL IMPACTS

While Chapter 3 of this EA focused on the affected environment as the Section 6(f)(3) boundary, Jay Cooke State Park, Chapter 4 will focus on the degree to which the resources will be impacted resulting from the land conversion out of LAWCON, consisting of a 160-foot-wide corridor traversing 575 feet, or 2.13 acres, of Jay Cooke State Park.

4.1 PHYSICAL AND BIOLOGICAL ENVIRONMENT

The proposed Project utility corridor is located in the northeastern corner of Jay Cooke State Park. The Project corridor does not have any recreational facilities such as picnic areas, campground, interpretive sites, overlooks, or water access points. The corridor is also void of marked summer hiking and biking trails and winter cross-country ski, fat-tire biking, and snowmobile trails. The planned corridor to be cleared is primarily a mixed deciduous hardwood forest over ridge and valley topography.

4.1.1 Listed, Proposed, and Candidate Species

Federally-listed Species

On June 12, 2018, MP submitted a letter to Andrew Horton of the USFWS Twin Cities Ecological Services Field Office requesting informal Section 7 consultation (Appendix B). On July 13, 2018, Mr. Horton provided concurrence with the determinations of *not likely to adversely affect* for the Canada lynx and gray wolf, and *may affect but incidental take is not prohibited* for the northern long-eared bat (Appendix B). Determinations for each of the species with the potential to occur in the Project area are summarized below.

Piping Plover

Due to lack of habitat and species records within one mile of the Project area, the Project will have *no effect* on the piping plover, and this species is not discussed further. MP understands that the USFWS does not require concurrence to be obtained for *no effect* determinations.

Canada Lynx

Construction activities associated with the Project have the potential to impact individual Canada lynx in the Project area. Specifically, noise or presence of humans and equipment involved in construction activities may cause Canada lynx to divert from the area. The resulting response would be temporary disturbance that would not have a measurable or detectable effect on an individual's survivorship or reproductive capacity. As such, the potential impact would be insignificant and would not result in harassment or an adverse impact.

Canada lynx use a variety of forest cover types for hunting and denning. These types of habitat would be impacted during construction, which in turn may temporarily affect individual lynx foraging and sheltering behaviors. However, the abundance of habitat in the vicinity of the Project suggests that forested habitat impacted by the Project would not subtract from the overall availability of these habitat types for Canada lynx and would not result in a measurable or detectable impact on an individual's sheltering, feeding, or

breeding behaviors. Thus, any potential impacts from construction activities associated with the Project on suitable habitat would be insignificant and would not result in harm or an adverse impact.

If a Canada lynx is sighted within 1 mile of the construction workspace during construction, or if the USFWS notifies the MP of a Canada lynx sighting within 1 mile of the construction workspace, construction activities would cease until the individual(s) have left the area. Any lynx sightings by a contractor or EI would be immediately reported to the USFWS and MDNR.

Due to the low density of the species in the Project area, the highly mobile nature of the species, and the proposed conservation measures, the potential impacts on the Canada lynx would be insignificant. Therefore, we conclude that the Project *may affect, but is not likely to adversely affect* this species.

Gray Wolf

Construction activities associated with the Project have the potential to disturb gray wolf individuals in the Project area. Specifically, noise or presence of humans and equipment involved in construction activities may cause gray wolf adults and juveniles to divert from the area. The resulting response would be temporary disturbance that would not have a measurable or detectable effect on an individual's survivorship or reproductive capacity. Therefore, the potential impact on gray wolves would be insignificant and would not result in harassment or other adverse impact.

If a gray wolf is sighted within 1 mile of the construction workspace during construction, or if the USFWS notifies MP of a gray wolf sighting within 1 mile of the construction workspace, construction activities would cease until the individual(s) have left the area. Any wolf sightings by a contractor or EI would be immediately reported to the USFWS and the MDNR.

Due to the highly mobile nature of the species, its use of a variety of habitats, and the proposed conservation measures, potential impacts on the Western Great Lakes population of gray wolf would be insignificant. Therefore, the Project *may affect, but is not likely to adversely affect* this species.

Northern Long-eared Bat

The entire Project will require the removal of approximately 6.22 acres of trees, most of which are greater than 3 inches in diameter at breast height. Other woody vegetation and brush may be removed, but this material is not considered suitable habitat for the northern long-eared bat. As a result, MP will rely on the programmatic Biological Opinion developed by USFWS on January 5, 2016 to fulfill section 7 consultation for this species. Therefore, the Project *may affect* the northern long-eared bat, *but incidental take is not prohibited*.

Minnesota State-listed Species

There are no state-listed species records within one mile of the Project, and as such, will not impact state listed threatened or endangered species.

4.2 WATER FEATURES

4.2.1 Waterbodies

There are no National Hydrography Dataset waterbodies within the Project area. Similarly, field delineations during June 2018 confirmed absence of waterbodies (Map 4 and Appendix D).

4.2.2 Wetlands

There are no National Wetland Inventory wetlands in the Project area. However, one wetland was identified in the Project area during wetland delineations in June 2018. The delineated wetland covers 707 square feet in the Project area and is a wooded swamp Type 7A wetland type. This wetland is located within a valley between ridges and is associated with ravine or valley stream flow. MP has designed the Project to place transmission structures at higher elevations and span the valleys, including this wetland. Hand clearing of trees and shrubs with no associated ground disturbance may be necessary within the identified wetland area.

4.2.3 Floodplain

The proposed Project will not cross the FEMA-Designated 100-year floodplain (Map 5). As such, the Project will not impact floodplains.

4.3 LAND USE

The Project is not expected to affect land use within Jay Cooke State Park. Project is located in an area of the Park that is void of recreational facilities such as trails, camp sites, boat launches, and picnic areas. While the land cover will be converted from forested to a utility corridor, the proposed reroute will be located parallel to MP's existing utility corridor and the land use will remain as passive recreation in this portion of the Park. Conversion of new corridor out of LAWCON will not limit recreational opportunities for any population, minority, low income, or otherwise.

Tourists using the nearby trail system may be impacted by noise during construction; however, such noise would be temporary and intermittent and would become increasingly less perceptible as hikers advance on the trail away from the vicinity of the project area. The overall noise impacts resulting from construction are expected to be negligible and noise levels are not expected to exceed Minnesota Noise Standards (Minn. Rules Ch. 7030). Construction and operation of the Project will not impact Jay Cooke State Park operations and visitors are expected to continue enjoying the recreational opportunities of the Park.

4.4 CULTURAL RESOURCES

As stated in Section 3.4, no architectural or archaeological properties were identified within the Project area during the archaeological literature and records review or the Phase I reconnaissance survey. The Minnesota DNR is consulting the Minnesota SHPO to obtain concurrence that the project would not present an adverse effect to historic properties. Further, while not expected, should archaeological materials be identified during Project construction activities, such activities should cease in the immediate area, a responsible person at MP should be notified, and a professional archaeologist should be contacted to evaluate the identified archaeological site. In the event of a confirmed archaeological site, MP should

initiate steps for the recording and evaluation of the find, begin communication with applicable agencies and other authorities, and implement any procedures for treatment. In the event of unintended identification of human remains, the procedures as outlined in Minnesota Statute Chapter 307, "Private Cemeteries," must be followed. The Project will have no direct impacts upon architectural or historic resources.

4.5 PALEONTOLOGICAL RESOURCES

The project crossed areas where bedrock may be at the surface or near the surface, and common marine invertebrate fossils could be present in shallow bedrock. Pleistocene-age megafauna remains also could be found in the glacial sediments overlying bedrock; however, these remains are very rare. Further, MP disturbance to bedrock during this project will be negligible or will not occur. Therefore, impacts to paleontological resources are not anticipated.

4.6 PUBLIC HEALTH AND SAFETY

The project will not result in adverse impacts to public health and safety, supported by the following:

- There will be no discernable difference of the EMF, EF, and stray voltage between the existing 15 Line and the new rerouted line that will be installed parallel to the north.
- Considerable research has been conducted in recent decades to determine whether exposure to power-frequency (60 Hz) electric and magnetic fields can cause biological responses and adverse health effects. The multitude of epidemiological and toxicological studies has shown at most a weak association (i.e., no statistically significant association) between EMF exposure and health risks.
- In 1999, the National Institute of Environmental Health Sciences (NIEHS) issued its final report on "Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields" in response to the Energy Policy Act of 1992. In the report, the NIEHS concluded that the scientific evidence linking EMF exposures with health risks is weak and that this finding does not warrant aggressive regulatory concern. However, in light of the weak scientific evidence supporting some association between EMF and health effects and the fact that exposure to electricity is common in the United States, the NIEHS stated that passive regulatory action, such as providing public education on reducing exposures, is warranted.⁵
- The U.S. Environmental Protection Agency (USEPA) seems to have come to a similar conclusion about the link between adverse health effects, specifically childhood leukemia, and power-frequency EMF exposure. On its website, the USEPA states:
- Many people are concerned about potential adverse health effects. Much of the research about power lines and potential health effects is inconclusive. Despite more than two decades of research to determine whether elevated EMF exposure, principally to magnetic fields, is related to an increased risk of childhood leukemia, there is still no definitive answer. The general scientific consensus is that, thus far, the evidence available is weak and is not sufficient to establish a definitive cause-effect relationship.⁶
- Minnesota, California, and Wisconsin have each conducted their own literature reviews or research to examine this issue. In 2002, Minnesota formed an Interagency Working Group to

⁵ Report is available at <http://www.niehs.nih.gov/health/topics/agents/emf/>

⁶ See <http://www.epa.gov/radtown/power-lines.html>

evaluate the research and develop policy recommendations to protect the public health from any potential problems arising from EMF effects associated with HVTLs. The Minnesota Department of Health published the Working Group's findings in A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options. The Working Group summarized its findings as follows:

Research on the health effects of EMF has been carried out since the 1970's. Epidemiological studies have mixed results – some have shown no statistically significant association between exposure to EMF and health effects, some have shown a weak association. More recently, laboratory studies have failed to show such an association, or to establish a biological mechanism for how magnetic fields may cause cancer. A number of scientific panels convened by national and international health agencies and the United States Congress have reviewed the research carried out to date. Most researchers concluded that there is insufficient evidence to prove an association between EMF and health effects; however, many of them also concluded that there is insufficient evidence to prove that EMF exposure is safe.⁷

- Based on findings like those of the Working Group and NIEHS, the Minnesota Public Utilities Commission has consistently found that “there is insufficient evidence to demonstrate a causal relationship between EMF exposure and any adverse human health effects.”⁸ This conclusion was further justified in the recent Route Permit proceedings for the Brookings County – Hampton 345 kV Project (Brookings Project). In the Brookings Project Route Permit proceedings, the Applicants (Great River Energy and Xcel Energy) and one of the intervening parties both provided expert evidence on the potential impacts of electric and magnetic fields on human health. The administrative law judge (ALJ) in that proceeding evaluated written submissions and a day-and-a-half of testimony from the two expert witnesses. The ALJ concluded: “there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for [EMF] exposure.”⁹ The Commission adopted this finding on July 15, 2010.¹⁰

4.7 CUMULATIVE POTENTIAL EFFECTS

Cumulative potential effects refer to the impacts on the environment that result from incremental impact of the proposed action when added to together, past, present and reasonably foreseeable future actions. Cumulative potential effects for each resource analyzed in Chapters 3 and 4 were evaluated. Discernable cumulative potential effects, adverse or beneficial, will not likely occur as the result of this land conversion for the planned reroute of the MPs existing HVTL within the Park.

⁷ Minnesota Department of Health. 2002. *A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options*

⁸ See, for example, *In the Matter of the Application for a HVTL Route Permit for the Tower Transmission Line Project*, Docket No. ET-2, E015/TL-06-1624, Findings of Fact, Conclusions of Law and Order Issuing a Route Permit to Minnesota Power and Great River Energy for the Tower Transmission Line Project and Associated Facilities (August 1, 2007)

⁹ *In the Matter of the Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota*, Docket No. ET-2/TL-08-1474, ALJ Findings of Fact, Conclusions and Recommendation at Finding 216 (April 22, 2010 and amended April 30, 2010).

¹⁰ *In the Matter of the Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota*, Docket No. ET-2/TL-08-1474, Order Granting Route Permit (September 14, 2010).

4.8 ENVIRONMENTAL JUSTICE

The Proposed Action described in this EA is not likely to have a significant adverse environmental, economic, social, or health impact on minority or low-income populations as impacts to recreation within Jay Cooke State Park are not likely to be affected. No other issues related to environmental justice from the Project are anticipated.

5.0 CHAPTER 5 - COORDINATION AND CONSULTATION

5.1 AGENCY CONSULTATIONS

MP issued project notification and request for comment letters to several federal and state agencies in accordance with NEPA and LWCF Manual. The mailing list and each letter with responses, if applicable, are included in Appendix B.

5.2 PROJECT NOTIFICATION AND REQUEST FOR COMMENTS LETTERS

MP requested issued project notification and request for comment letters to several federal, state and local resource agencies. The mailing list and each letter with responses, if applicable, are included in Appendix B.

5.3 LIST OF EA PREPARERS

The following are the list of preparers of this EA and supporting documentation:

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