
Environmental Assessment of the Potential Human and
Environmental Impacts of the
Detroit Lakes Public Utility 115 Kilovolt
High Voltage Transmission Line and Substation

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Much of the information used to prepare this environmental assessment comes from the route permit application. Additional sources include new information provided by Detroit Lakes Public Utility, information from relevant environmental review documents for similar projects, spatial data and site visits to the project area.

Project Mailing List

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Alternative Formats

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Abstract

This environmental assessment (EA) studies potential human and environmental impacts from the Detroit Lakes 115 kilovolt high voltage transmission line and substation project, and discusses ways to minimize, mitigate, or avoid these impacts. The Minnesota Public Utilities Commission will use the information provided in this EA to inform their decision about issuing a route permit for the project.

Under the Power Plant Siting Act, a route permit from the Minnesota Public Utilities Commission (Commission) is required to construct a high voltage transmission line (HVTL). Detroit Lakes Public Utility (Applicant or DLPU) filed an application with the Commission for a route permit to construct approximately 2.2 miles of new 115 kilovolt (kV) transmission line and substation in Becker County. Detroit Lakes Public Utilities (DLPU), of Detroit Lakes, Minnesota owns and operates a municipal electric system that provides electric service to the citizens of Detroit Lakes and surrounding areas. DLPU proposes the project to address load growth, interconnecting with an existing 115kV GRE line at the southern terminus and the new substation at the northern terminus.

DLPU submitted a route permit application on July 9, 2019. The application was filed pursuant to the alternative review process defined in Minnesota Statute 216E.04 and Minnesota Rules 7850.2800–3900. On October 28, 2019 the Commission issued an order accepting the route permit application as complete pending additional information and authorizing review under the alternative permitting process. On November 6, 2019 DLPU filed a revised application.

Department of Commerce (Commerce), Energy Environmental Review and Analysis (EERA) staff is responsible for conducting environmental review for route permit applications submitted to the Commission. EERA held a scoping meeting in Detroit Lakes on December 4, 2019 and has prepared this Environmental Assessment (EA) for the proposed DLPU 115 kV HVTL and Substation project. This EA addresses the issues required in Minnesota Rules 7850.3700, subpart 4, and those identified in Commerce’s February 27, 2020 EA Scoping Decision.

Following release of this EA, a public hearing will be held. At the hearing you may speak, ask questions, and submit comments about the project. The hearing will be presided over by an administrative law judge (ALJ) from the Office of Administrative Hearings. Upon completion of the environmental review and hearing process, the ALJ will provide a summary report to the Commission for its final permit decision. A decision on the route permit for the proposed project is anticipated in fall of 2020.

For additional information, or if you have questions, contact Commerce or Commission staff.

If you have questions or would like more information, please contact the EERA Environmental Review Manager Jamie MacAlister (651-539-1775) or jamie.macalister@state.mn.us or the Commission Public Advisor Charley Bruce (651-201-2251 or publicadvisor.puc@state.mn.us).

Additional documents and information, including the route permit application, can be found on eDockets by searching “18” for year and “755” for number: <https://www.edockets.state.mn.us/EFiling/search.jsp> or the EERA webpage <https://mn.gov/eera/web/project/13642/>.

Introduction

Detroit Lakes Public Utility (DLPU) is proposing to construct approximately 2.2 miles of new 115 kilovolt (kV) high voltage transmission line (HVTL) and a substation south of Detroit Lakes in Becker County. The project will address load concerns and system deficiencies in the southern portion of DLPU's service territory.

Under the Power Plant Siting Act, the Minnesota Public Utilities Commission (Commission) is charged with making sure that large electric power facilities are sited in a manner that minimizes adverse human and environmental impact while ensuring continuing electric power system reliability and integrity and fulfillment of electric energy needs in an orderly and timely fashion.¹ For HVTLs, the Commission fulfills this charge through their route permitting process. In the route permitting process, proposers of HVTLs file a route permit application with the Commission; the Commission conducts a review of human and environmental impacts with assistance from the Minnesota Department of Commerce (Commerce) Energy Environmental Review and Analysis (EERA) and then makes a permit decision. The permit decision defines the route for the project and appropriate mitigation measures.

This environmental assessment (EA) document is part of the review of human and environmental impacts. The EA informs the public and decision makers of the potential impacts of the proposed project, alternatives under consideration, and how impacts of the project and alternatives can be mitigated. This EA only studies the proposed project. No alternative routes were proposed for study during the scoping period and EERA did not identify any reasonable alternatives to DLPU's proposed route. Because there are no route alternatives in this case, the primary permitting decision before the Commission is what conditions to include in the route permit to mitigate the likely human and environmental impacts. Therefore, this EA focuses on issues relevant to the identification of appropriate mitigation measures.

Summary of Impacts

DLPU provided their preferred route for the project in their application. It is the most direct route from the tie-in with GRE's existing 115 kV line at the southern end of the project terminus to the proposed substation at the project's northern terminus (see Map 1). No route or segment alternatives were proposed during the scoping comment period and as a result, this EA only analyzes the preferred route proposed by DLPU. Because the proposed route utilizes the existing MNDOT right-of-way along US 59, private easements are not necessary (with the exception of an aerial easement needed at the tie-in point). Construction and operation of the project will impact human and environmental resources in the project area. Most of the impacts will be short-term and are common to any large construction project, such as noise, dust, and soil disturbance. These impacts can be mitigated through standard and site-specific construction practices. Long-term permanent impacts, such as aesthetics, cannot be mitigated, but have been minimized by siting the project within a mixed-use highway corridor, minimizing project length, and the ability to accommodate future load projections on the system.

In general, standard mitigation measures included in the Commission's generic route permit will address the impacts of the proposed project. Project-specific mitigation measures that will further reduce the HVTL's impact include the following:

- Meeting all MNDOT permit requirements to maintain roadway safety and to restore the ROW.

¹ Minnesota Statutes (Minn. Stat.) 216E.02

- Installing swan-type bird flight diverters on the entire length of the project to help mitigate the impact on birds given the project's proximity to lakes and wetlands.
- Preventing soil erosion and potential sedimentation in lakes and wetlands adjacent to the project right-of-way.

This EA is organized as follows:

- **Section 1** provides a brief overview of the proposed project.
- **Section 2** explains the regulatory framework and required permits and approvals.
- **Section 3** provides a more detailed description of the design and construction of the proposed project.
- **Section 4** studies the potential impacts to both human and natural resources; identifies measures to avoid, minimize, or mitigate adverse impacts; and describes unavoidable impacts and irreversible or irretrievable commitments of resources. Where relevant it also summarizes the cumulative potential effects of the proposed project and other projects.
- **Section 5** discusses cumulative impacts and unavoidable impacts.

SECTION ONE

Project Overview

This section of the EA provides basic information about who is proposing the proposed 115 kV HVTL project, why they are proposing it, and an overview of what is being proposed including a description of the route, right-of-way requirements, estimated cost and timeline.

Project Proposer

The Project is proposed by Detroit Lakes Public Utility, who owns and operates a municipal electric system that provides electric service to the citizens of Detroit Lakes and surrounding areas.

Detroit Lakes Public Utility of Detroit Lakes, Minnesota, owns and operates a municipal electric system that provides electric service to Detroit Lakes and the surrounding area. DLPU proposes to build and operate a 115 kV HVTL and substation. DLPU applied for a route permit from the Commission for the project in July of 2019 and a revised application in November of 2019.² The proposed project is needed to provide additional capacity to the projected loads and system deficiencies in the southern portion of the DLPU service territory.

Project Purpose

The project will address load growth and system deficiencies in the local transmission system.

The proposed project will provide electric service for a 115 kV transmission line and associated substation serving Detroit Lakes and surrounding area. Demand forecasts show an increase in peak demand through 2026 and numerous deficiencies were detected in the system under various emergency scenarios without an upgrade to the existing transmission system.

Proposed Project

The route requested by DLPU utilizes existing road-right-away along US 59 and the substation will be located on a parcel owned by DLPU.

The proposed 115 kV transmission line and substation will be located in Becker County, just south of Detroit Lakes on US 59 and will traverse sections 21 and 33 in Lake View Township. **Map 1 in Appendix A** shows the project location.

DLPU proposes to construct approximately 2.2 miles of new 115 kV HVTL and an associated substation. The southern terminus of the project is located in Section 33, T138N, R41W and ties into an existing 115 kV line owned by Great River Energy via a 3-way line switch. The 3-way switch will be constructed by Great River Energy. From the tie-in point, the line travels north for approximately 0.67 mile on the east side of US 59. The transmission line crosses US Highway 59 and continues north on the west side of US Highway 59 for 1.54 miles to the northern terminus in Section 21, T138N, R41W where the substation will be located.

² Detroit Lakes Public Utility (November 6, 2019) *Application for a Route Permit for a 115 kV High Voltage Transmission Line (Revised)*, eDockets Nos. [201911-157283-02](#), [201911-157283-03](#), [201911-157283-04](#), [201911-157283-05](#), [201911-157283-06](#), [201911-157283-07](#), [201911-157283-08](#) (hereinafter “Application”).

The proposed 115/12.47 kV substation will have a 14 mega volt ampere (MVA) transformer along with associated equipment, control house, circuit breakers, and surge arrestors. The estimated dimensions for the new south substation, subject to final design, are 140 feet by 160 feet. **Appendix B** provides substation dimensions and layout.

DLPU is proposing to construct the new 115 kV HVTL in the existing MNDOT ROW along US Hwy 59, thereby minimizing impacts to adjacent land owners. The ROW width of US Hwy 59 varies; at its narrowest the ROW is 100 feet from centerline, at its widest it is 160 feet. DLPU and MNDOT have agreed on an alignment within the ROW. **Map 2 in Appendix A** shows the HVTL alignment within the ROW and tentative pole placements.

At MnDOT's request, the structures will be placed at least 65 feet from the centerline of the highway and as far back as practicable within the ROW, allowing MNDOT to maintain roadway safety standards and DLPU to meet National Electric Safety Codes. The varying route width allows DLPU and MNDOT to make adjustments on final structure placement once ground surveys for other utilities in the ROW are completed.

Project construction is proposed to begin in the fourth quarter of 2020 and cost approximately \$3.5 million.

Construction of the proposed HVTL project construction is expected to occur in the fourth quarter of 2020 and is not anticipated to take more than two months to complete.³ DLPU estimates that the total cost of the proposed HVTL project will be approximately \$3.5 million, with the cost for the transmission Line estimated at \$1.3 million and the cost of the proposed substation and other facilities estimated at \$2.2 million.⁴

Operation and maintenance costs for the proposed HVTL project will be minimal in the initial years of operation since it will be new and minimal maintenance is required. Annual operation and maintenance costs for 115 kV transmission lines in the Upper Midwest are typically three hundred dollars (\$300) to six hundred dollars (\$600) per mile of transmission right-of-way.⁵ The principal operations and maintenance cost will be incurred through scheduled inspections which DLPU conducts annually, with maintenance and repair performed on an as-needed basis.

DLPU performs periodic inspections of substations and equipment. The type and frequency of inspection varies depending on the type of equipment. Typical inspection intervals are semi-annual or annual. Maintenance and repair are performed on an as-needed basis, and therefore the cost varies from substation to substation.

³ Application P. 9.

⁴ Ibid.

⁵ See *Blazing Star 2 Application for a Route Permit for a 115 kV Transmission Line in Lincoln County*, P. 21, eDockets No: 20184-141857-02.

SECTION TWO

Regulatory Framework

Under the Power Plant Siting Act, the Commission is charged with making sure that large electric power facilities are sited in a manner that minimizes adverse human and environmental impact while ensuring continuing electric power system reliability and integrity and fulfillment of electric energy needs in an orderly and timely fashion. For HVTLs like the one proposed by DLPU, the Commission fulfills this charge through their route permitting process.⁶ In this process, proposers of projects file an application with the Commission, EERA assists the Commission by reviewing human and environmental impacts of the proposal and alternatives to the proposal, and an Administrative Law Judge (ALJ) presides over a public hearing and compiles the record for the Commission. Finally, the Commission determines which route is most consistent with their charge and what permit conditions are needed to mitigate human and environmental impacts.

Route Permit Application

DLPU submitted a route permit application for this project for review under the alternative review process.

Project proposers must apply for (and receive) a permit from the Commission before building a HVTL. DLPU was required to apply for such a permit because the 2.2 mile 115 kV transmission line and substation meet the definition of an HVTL, which is “a conductor of electric energy and associated facilities [like substations] designed for and capable of operation at a nominal voltage of 100 [kV] or more and is greater than 1,500 feet in length.”⁷

DLPU filed a route permit application on July 9, 2019 and a revised application on November 6, 2019.⁸ The application was filed for review under the alternative review process⁹ because the HVTL qualifies for this somewhat streamlined process. Specifically, the alternative process simplifies the application process by allowing applicants to present just one proposed route in their application instead of presenting and analyzing multiple routes for the Commission’s consideration. Therefore, in their application, DLPU requested a permit for their preferred route and substation location. DLPU also requested the route width described above and presented a proposed alignment for the centerline of the transmission line.

On October 28, 2019, the Commission issued an order accepting the route permit application as complete pending additional information and confirming the project could be reviewed under the alternative permitting process.¹⁰ When the Commission accepts an application as complete it means the applicant

⁶ Minn. Stat. 216B.243, Subd. 2 requires that large energy facilities obtain a Certificate of Need from the Commission prior to construction. The proposed project does not meet the definition of large energy facility in Minn. Stat. 216B.2421, Subd. 2 (a large energy facility is any HVTL with a capacity of 100 kV or more and greater than ten miles of its length in Minnesota or that crosses a state line) and therefore does not need to go through the Certificate of Need process.

⁷ Minn. R. 7850.1000, Subp. 9.

⁸ Detroit Lakes Public Utility (November 6, 2019) *Application for a Route Permit for a 115 kV High Voltage Transmission Line (Revised)*, eDockets Nos. [201911-157283-02](#), [201911-157283-03](#), [201911-157283-04](#), [201911-157283-05](#), [201911-157283-06](#), [201911-157283-07](#), [201911-157283-08](#) (hereinafter “Application”).

⁹ Minn. Stat. 216E.04 and Minn. R. 7850.2800–3900

¹⁰ Minnesota Public Utilities Commission (October 28, 2019). Order in the Matter of the Application of Detroit Lakes Public Utility Commission for a 115-Kilovolt High Voltage Transmission Line and Substation in Becker County, Minnesota, eDockets No. [201910-156919-01](#) (hereinafter “Order”).

has submitted all the required information needed to move forward in the permitting process. Under the alternative review procedures the next step in the permitting process after application completeness is review of the human and environmental impacts of the proposed project as well as any reasonable alternatives that are identified in the environmental review process.

Environmental Review

Environmental review provides information on environmental impacts and allows opportunity for public input.

The environmental review process is used to ensure that the Commission and other stakeholders understand the human and environmental impacts of their permitting decisions before action is taken on a permit application. EERA staff helps the Commission with environmental review by working with stakeholders to identify critical human and environmental issues, assessing the impacts the project could have on these human and environmental features, finding possible alternatives to avoid these impacts, or suggesting mitigation measures to lessen them. With this kind of information in hand, the Commission is able to address their statutory charge of siting infrastructure in a way that avoids impacts to people and nature, but still allows for reliable and efficient delivery of electricity.

Under the alternative review process, this information is packaged together in an environmental assessment (an EA; the document you are currently reading) and made available to the Commission and to the public.

The first step in environmental review is determining the topics and alternatives to analyze in the EA. The public did not suggest any unique issues or alternatives for study in the EA.

The first step in the preparation of an EA is identifying what the EA should study. This is accomplished through a process called “scoping.” The purpose of the process is to focus the EA on the most relevant information needed by the Commission to make an informed route permit decision process by: (1) focusing on the types of impacts and issues important to a reasoned route permit decision, and (2) identifying any reasonable alternatives to the applicant’s proposal that should be considered by the Commission.

Scoping is accomplished through in-person meetings with the public as well as a comment period during which written input can be provided.¹¹ EERA conducts the scoping meetings and also reviews written comments provided during the comment period. EERA considers all of this input in developing a written scoping document that identifies what the EA should study.

For the proposed DLPU HVTL project, the Commission initiated the scoping process for this EA on November 13, 2019, when they filed a *Notice of Environmental Assessment Scoping and Public Information Meeting* on eDockets.¹² Commission staff also sent the notice to those individuals on the project contact list, including state agency technical representatives and affected landowners.¹³ DLPU published the notice in the *Detroit Lakes Tribune* on November 13, 2019.¹⁴

¹¹ Minn. R. [7850.3700](#), subpart. 2.

¹² Minnesota Department of Commerce and Minnesota Public Utilities Commission (November 13, 2019) *Notice of Environmental Assessment Scoping and Public Information Meeting*, eDockets No. [201911-157520-01](#).

¹³ Minnesota Public Utilities Commission (November 13, 2019) *Certificate of Service*, eDockets No. [201911-157520-02](#)

¹⁴ DLPU (November 26, 2019) *Affidavits of Mailing and Publication*, eDockets No. [201911-157896-01](#).

EERA and Commission staff jointly held the scoping and public information meeting as noticed on December 4, 2019, to provide information about the permitting process and the project, answering questions, and gathering input on topics for study in the EA.

No stakeholders in the project area attended the meeting. Similarly, no stakeholders in the project area participated in providing written comments during the public comment period, which extended from November 13 to December 27, 2019.

Written comments were received from the Minnesota Department of Natural Resources (MDNR)¹⁵ and the Minnesota Department of Transportation (MNDOT).¹⁶ The MDNR requested the use of bird diverters for the length of the HVTL and noted that the proposed route is adjacent to a lake of moderate biological significance and an aquatic management area. In their comment letter MDNR recommended using swan-flight type avian flight diverters spaced 15 feet apart on the length of the project as a mitigation measure to reduce avian collisions.

MNDOT's comments focus on pole location within the ROW and the need for a *Utility Accommodation on Trunk Highway Right of Way Permit* for the project to be located in its ROW. Further, MnDOT indicated that the applicant should continue to coordinate with them on any construction work that may impact MnDOT right of way, road closings, or roadway safety.

A generic scope was approved for the EA with study limited to impacts and mitigation for the Applicant's proposed route.

Other than the use of swan-flight type avian flight diverters as mitigation and the need to coordinate with MNDOT on pole placement within the ROW, no unique issues critical to the Commission's decision were identified in the scoping process to help focus the EA. No route alternatives were proposed during scoping and EERA was not able to independently identify other alternatives for study that use existing ROW and that are as direct as the route proposed by the applicant.

EERA proposed a generic scope for the EA with study limited to impacts and mitigation for DLP's proposed route in a Scoping Summary Report issued on January 10, 2020.¹⁷ On January 27, 2020 Commission staff reviewed EERA's Scoping Summary Report and the proposed scope.¹⁸ Consistent with staff's recommendation, the Commission took no action on the route alternatives.¹⁹ On February 27, 2020 a scoping decision for the EA was issued and is included in **Appendix D**.²⁰

EERA Staff prepared the EA, focusing on mitigation of impacts from DLP's proposal.

EERA staff prepared this EA. The topics covered reflect the scoping decision for the EA²¹. Because there are no route alternatives to consider, the primary permitting decision before the Commission focuses on

¹⁵ Minnesota Department of Natural Resources (December 26, 2019) *Comments*, eDockets No. [201912-158602-01](#), [201912-158602-02](#), [201912-158602-03](#).

¹⁶ Minnesota Department of Transportation (December 20, 2019) *Comments*, eDockets No. [201912-158513-01](#)

¹⁷ Minnesota Department of Commerce (January 10, 2020) *Scoping Summary*, eDockets No. [20202-160758-01](#)

¹⁸ Minnesota Public Utilities Commission (January 27, 2020), *Briefing Papers* [20201-159613-01](#).

¹⁹ *Id.*

²⁰ Minnesota Department of Commerce, EERA (February 27, 2020), *Scoping Decision*, eDockets No. [20202-160758-01](#)

²¹ *Id.*

conditions to include in the route permit to mitigate human and environmental impacts. Therefore, EERA staff focused on studying issues relevant to the identification of appropriate mitigation measures.

EERA derived much of the information used in the preparation of the EA from documents prepared by DLPU, including the Route Permit Application. In addition to material provided by DLPU, information from the two scoping comments, relevant environmental review documents for similar projects, spatial data, and information gathered during EERA visits to the project area were used to prepare this document.

Consistent with the scoping decision, there are some issues that this EA does not address because they are beyond the scope of what is relevant to the Commission's decision-making. Specifically, this EA does not address:

- A no-build alternative.
- Issues related to project need, size, type, or timing.
- Impacts of specific energy sources.
- The manner in which landowners are compensated for right-of-way easements.
- The ability of DLPU to use eminent domain to acquire easement(s) for the project.

Public Hearing

A public hearing will be held to provide stakeholders an opportunity to weigh in on the information in the EA and share perspectives on what Commission action is best.

After the EA is completed a public hearing will be held²² in order to allow stakeholders, informed by the issues studied in the EA, to comment on the project and the Commission's permit decision. People can do this by attending the hearing and speaking, presenting evidence, asking questions, and making comments. People can also provide their thoughts in writing during the public comment period associated with the hearing. Both written and oral comments received during the hearing period become part of the record in the proceeding. EERA staff will be available at the hearing to respond to questions and comments about the EA. These questions and answers become part of the record, but staff does not revise or supplement the EA document.

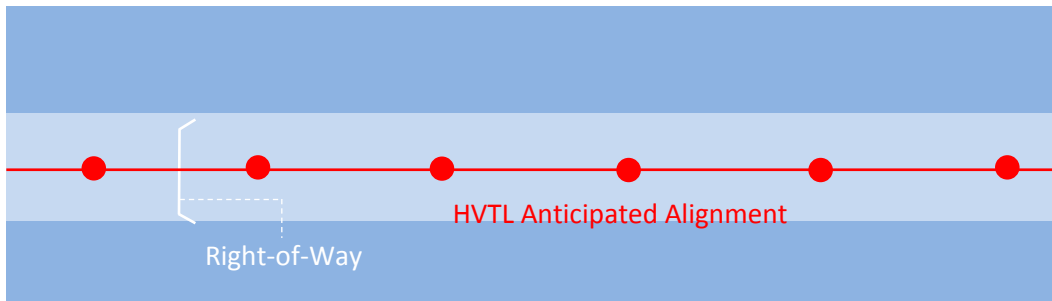
An ALJ from the Office of Administrative hearings leads the public hearing. After the public comment period is over, the judge will provide the Commission a written report and recommendation based on all of the information in the record.

Route Permit Decision

Once the Commission has received the ALJ's report, they will schedule a meeting to make a decision on the permit. When the Commission issues a route permit it draws on the record (application, comments, environmental review, and all other documents submitted into the project docket) to approve a route, route width, and an anticipated alignment (Error! Reference source not found.). Route permits also outline conditions specifying construction and operation standards and mitigation measures that must be taken to reduce project impacts. The generic route permit template included in **Appendix C** provides a point of reference for the kinds of conditions that are typically included in HVTL route permits.

²² Minn. R. 7850.3800, Subp. 1

Figure 1 Route and Right-of-Way Illustration



At the Commission meeting for permitting the project, the Commission will weigh human and environmental factors as well as factors related to cost and efficient delivery of energy. The specific factors the Commission must weigh are specified in statute and rule²³ and include the following:

- effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- effects on public health and safety;
- effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- effects on archaeological and historic resources;
- effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- effects on rare and unique natural resources;
- application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- electrical system reliability;
- costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- adverse human and natural environmental effects which cannot be avoided; and
- Irreversible and irretrievable commitments of resources.

In some permitting scenarios, the Commission weighs these factors to determine whether to issue a permit, what route is best, and what mitigation measures to require. In this case, since the only route under consideration is the applicant's preferred route and there are no other routes, route widths or rights-of-way under consideration, the Commission will not be weighing the factors listed above in order to determine *whether* to issue the permit or *what route is best*. Rather, they will be considering these

²³ Minn. Stat. 216E.03, subdivision 7(b) identifies 12 considerations that the Commission must take into account when designating a route for a HVTL. These considerations are further clarified and expanded by Minn. R. 7850.4100, which identifies 14 factors the Commission must consider when making a permit decision.

factors as they decide what kinds of mitigation make sense to require as conditions in the route permit for the route, route width, and rights-of-way requested by DLPU.

At the time the Commission makes a final decision about the permit application, it must also determine whether the EA and the record created at the public hearing address the issues identified in the scoping decision. In addition, the Commission must make specific findings that it has considered locating a route for a new HVTL along an existing HVTL route or parallel to existing highway rights-of way, and, to the extent these are not used for the route, the Commission must state the reason why they are not used.

The Commission must make a final decision on the route permit within 60 days after receipt of the ALJ report. A final decision must be made within six months after the Commission's determination the application is complete; however, this time limit may be extended for up to three months for just cause or upon agreement of the applicant.²⁴ A decision by the Commission on a route permit application for the proposed HVTL project is anticipated early in the second half of 2020.

The HVTL must be constructed within the Commission's designated route and along the anticipated alignment unless subsequent permissions are requested and approved by the Commission. "Any right-of-way modifications within the designated route [must be] located so as to have comparable overall impacts relative to the factors in Minnesota Rule 7850.4100, and shall be specifically identified and documented in and approved as part of the plan and profile."²⁵ Modifications to the anticipated alignment generally result from landowner requests or unforeseen conditions.

Other Permits, Approvals, and Applicable Codes

A route permit from the Commission is the only state permit required for the routing of the project. The Commission's route permit supersedes local planning and zoning and binds state agencies.²⁶ Thus, state agencies like MDNR and MNDOT are required to participate in the Commission's permitting process to aid the Commission's decision-making and to indicate routes that are not permissible.²⁷

After the Commission issues a route permit, however, various federal, state, and local permits may be required for activities related to the construction and operation of the Proposed Project in the route that the Commission has authorized. All permits subsequent to the Commission's issuance of a route permit and necessary for the project (commonly referred to as "downstream permits") must be obtained by a permittee. **Table 2** identifies potential permits that might be required in addition to a route permit.

²⁴ Minn. R. 7850.3900 Subp. 1

²⁵ Generic Route Permit Template at Section 4

²⁶ Minn. Stat. [216E.10](#), Subd. 3.

²⁷ Minnesota Statute 216E.10, subdivision 3

Table 1 Potential Permits

Federal	
U.S. Army Corps of Engineers	Section 404 of the Federal Clean Water Act
U.S. Fish and Wildlife Service	Threatened and Endangered Species Consultation
State	
Department of Natural Resources	Endangered Species Consultation
	License to Cross Public Lands and Waters
Department of Transportation	Utility Accommodation on Trunk Highway Right-of-Way
Pollution Control Agency	National Pollutant Discharge Elimination System Permit
	Clean Water Act Section 401 Certification
Local	
Becker County	Highway Crossing and Access Permits

Federal Permits

The United States Army Corps of Engineers (USACE) “regulates the discharge of dredged or fill material into waters of the United States, including wetlands.”²⁸ Dredged or fill material could impact water quality. A permit is required from USACE if the potential for significant adverse impacts exists.

A permit is required from the United States Fish and Wildlife Service (USFWS) for the incidental “taking”²⁹ of any endangered species. As a result, USFWS encourages project proposers to consult with the agency to determine if a project has the potential to impact federally-listed threatened and endangered species. Additionally, consultation can lead to the identification of mitigation measures for potential impacts associated with the project.

State Permits

Potential impacts to state lands and waters, as well as fish and wildlife resources are regulated by DNR. Utilities are required to obtain a License to Cross State Lands and Waters.³⁰ Projects affecting the course, current, or cross-section of lakes, wetlands, and streams that are public waters may require a Public Waters Work Permit.³¹ Not unlike the USFWS, DNR encourages project proposers to consult with the agency to determine if a project has the potential to impact state-listed threatened or endangered

²⁸ U.S. Environmental Protection Agency (October 27, 2015) *Section 404 Permit Program*, Retrieved May 9, 2020, from: <http://www.epa.gov/cwa-404/section-404-permit-program>.

²⁹ 16 U.S. § 1532(19) (defining “take” to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct).

³⁰ Minn. Stat. 84.415.

³¹ Minnesota Department of Natural Resources (n.d.) *Requirements for Projects Involving Public Waters Work Permits*, Retrieved March 15, 2018, from: http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/requirements.html.

species. Additionally, consultation can lead to the identification of mitigation measures for potential impacts associated with the project.

A permit from MnDOT is required for construction, placement, or maintenance of utility lines adjacent or across trunk highway rights-of-way.³² MnDOT requires these permits to ensure that use and occupancy of the right-of-way does not interfere with the free and safe flow of traffic, among other reasons.³³

Construction projects that disturb one or more acres of land require a general National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit from the Minnesota Pollution Control Agency (MPCA). This permit is issued to “construction site owners and their operators to prevent stormwater pollution during and after construction.”³⁴ The NPDES/SDS permit requires (1) use of best management practices; (2) development of a Stormwater Pollution Prevention Plan or “SWPPP”; and (3) adequate stormwater treatment capacity once the project is complete. Additionally, MPCA regulates generation, handling, and storage of hazardous wastes.

A Clean Water Act Section 401 Water Quality Certification from MPCA might also be required. Section 401 of the Clean Water Act requires that persons conducting activities that may result in a discharge of a pollutant into waters of the United States obtain certification from relevant States that the discharge complies the applicable water quality standards.³⁵

Local Permits

Commission route permits preempt local zoning, building, and land use rules, regulations, or ordinances promulgated by regional, county, local, and special purpose government; however, coordination with local governments may be required for the issues listed below:

- Access/Driveway — Coordination may be required to construct access roads or driveways from county or township roads.
- Public Lands — Coordination would be required to occupy county or township lands such as forest lands, park lands, watershed districts, and other properties owned by these entities.
- Overwidth Load — Coordination may be required to move over-width or heavy loads on county or township roads.
- Road Crossing and Right-of-Way — Coordination may be required to cross or occupy county or township road rights-of-way.

Applicable Codes

In addition to these downstream permits, all transmission lines, regardless of route location, must meet requirements of the National Electrical Safety Code (NESC) for HVTLs. NESC standards are designed to safeguard human health “from hazards arising from the installation, operation, or maintenance of ...

³² Minn. R. [8810.3300](#), subp. 1.

³³ Minnesota Department of Transportation (n.d.) *MnDOT Policies*, Retrieved May 9, 2020, from: <http://www.dot.state.mn.us/policy/operations/op002.html>.

³⁴ Minnesota Pollution Control Agency (November 19, 2015) *Stormwater Program for Construction Activity*, Retrieved May 9, 2020, from: <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/stormwater/construction-stormwater/index.html>.

³⁵ Minnesota Pollution Control Agency (n.d.) *Clean Water Act Section 401 Water Quality Certifications*, Retrieved May 9, 2020, from: <https://www.pca.state.mn.us/water/clean-water-act-section-401-water-quality-certifications>.

overhead and underground electric supply and communication lines.” They also ensure that the transmission line and all associated structures are built from materials that will withstand the operational stresses placed upon them over the expected lifespan of the equipment, provided routine operational maintenance is performed.

Route Permits also require permittees to comply with North American Electric Reliability Corporation (NERC) standards.³⁶ NERC standards define the reliability requirements for planning and operating the electrical transmission grid in North America.

³⁶ Generic Route Permit Template Section 5.5

SECTION THREE

Engineering, Operational Design, and Construction

Once DLPU has received a route permit and all of the downstream permits they need, they will begin constructing the line according to the design and construction procedures outlined in their route permit application, and applying any mitigation that is required by their permits. In their route permit application DLPU provided details regarding engineering, operational design and construction of the proposed project. The sections that follow provide a summary of the information provided in the route permit application.

Route Design

DLPU selected the proposed route because it reduces human and environmental impacts.

In designing the proposed transmission line route, DLPU considered the factors (discussed above) that the Commission must weigh in making a route permit decision. DLPU chose the proposed route because it:

- Utilizes an existing developed corridor and MNDOT's ROW, minimizing human and environmental impacts;
- Minimizes the number of residences in proximity to the transmission line thereby reducing human impacts;
Provides the shortest route between the tie-in with GRE's 115 kV line and the proposed substation, which minimizes cost as well as land requirements.

The proposed route is designed to minimize overall impacts while avoiding the need to exercise eminent domain. DLPU has worked with MNDOT to ensure the project can be accommodated within MNDOT's ROW and with GRE to tie-into the existing energy infrastructure.

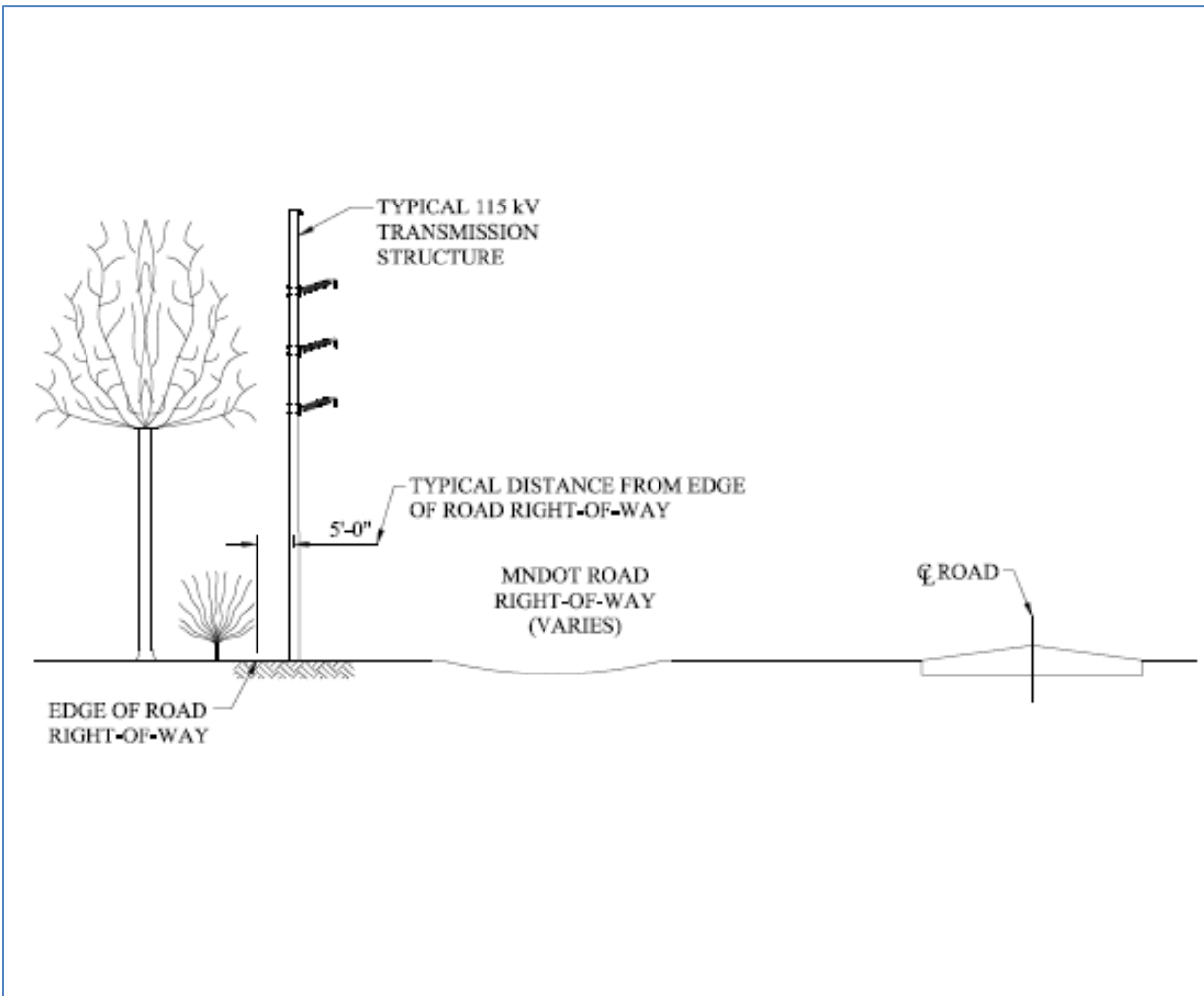
Transmission Line Engineering and Design

The proposed project will use 80-foot self-weathering steel poles spaced approximately 310 feet apart.

DLPU proposes to use three types of self-weathering steel monopoles capable of carrying a single-circuit 115 kV HVTL. Structures will be direct-embedded to a depth of nine to 14 feet. Three types of structures will be utilized depending on pole location within the ROW. Detailed structures configurations can be found in **Appendix B**.

The majority of the structures will have a stacked configuration, with all of the insulators on one side of the pole as shown in **Figure 2** below. This configuration will be used where the structures are close to the edge of MNDOT's ROW. The structures will be oriented so that the conductors are on the road side of the pole.

Figure 2 Typical Pole Configuration and Placement within the ROW



Where the right of way is wider, the structures will have a staggered configuration. Where large angles are anticipated within the alignment, such as where the line crosses the road and near the tie-in location, concrete foundations will be used.

The structures will have an average height of 70 to 80 feet with a 300 to 330 foot span between structures. Final design and geotechnical investigations may warrant the use of special structures to avoid sensitive areas or to accommodate special engineering circumstances. The need for special structures like self-supporting angle and dead-end structures will be determined during final design.

GRE will design the new switch structure needed at the southern terminus where the new 115 kV line ties into the existing GRE line. GRE has requested that the switch structure be installed outside of the ROW, approximately ten (10) feet from the ROW line on private property. DLPU will need to acquire a private easement (aerial) from the landowner to accommodate the overhang of the transmission line. **Map 2 in Appendix A** shows the placement of this structure and DLPU ROW requirements.

Substation Engineering and Design

The substation will be located on property owned by DLP.

The proposed substation will be located on a parcel owned by DLP, minimizing the need for easements or purchase of additional property. **Figure 3** shows the layout of the proposed substation. The residence, as pictured below, will be removed from the property prior to construction.

Figure 3 Proposed Substation Layout



The 115/12.47 kV substation will have a 14 mega volt ampere (MVA) transformer along with associated equipment such as control house, circuit breakers, and surge arrestors. The estimated dimensions for the new substation, subject to final design, are 140 feet by 160 feet.

Design Options to Accommodate Future Expansion

The proposed HVTL project can support future energy needs.

The proposed HVTL will be designed with enough capacity to meet current and future needs of the DLP system. The proposed substation site can accommodate a second transformer if necessary.

Construction

Construction activities will comply with permit conditions and follow established best management practices.

Construction will not begin until DLP has all the necessary approvals, land rights, and final design is complete. The company will notify landowners of the anticipated construction schedule, which will depend on permit conditions, weather conditions, and availability of workforce and materials. DLP anticipates construction to begin in the third or fourth quarter of 2020.

DLPU indicates that construction of the project will follow industry best management practices (BMPs)³⁷. These BMPs address transmission specifics such as right-of-way clearing, staging, and erecting transmission line structures and stringing transmission lines. They also address general construction best practices, including, but not limited to safety and stormwater pollution prevention planning.

Typical construction equipment includes: tree removal equipment, mowers, cranes, backhoes, digger-derrick line trucks, track-mounted drill rigs, dump trucks, front-end loaders, bucket trucks, bulldozers, pullers, tensioners, flatbed tractor-trailers, flatbed trucks, pickup trucks, concrete trucks, and various trailers. Excavation equipment can be wheel or track-driven.

Steps in the construction process include right-of-way preparation, staging, structure installation, conductor stringing, and collector substation work. Special construction methods will be used in sensitive areas.

Right-of-Way Preparation

Surveyors will stake the construction corridor within the approved right-of-way and the pole locations of the approved alignment in preparation for the construction crew arriving on site. Construction begins by removing trees and other vegetation from the right-of-way that will interfere with safe construction and operation of the HVTL. The Commission requires that applicants minimize tree removal to the maximum extent practicable and leave undisturbed low growing species that will not interfere with operation or construction.³⁸

Structures are generally installed at existing grade and DLPU does not expect grading at structure locations unless it is necessary to provide a level area for construction access and activities. All disturbed areas will be returned to pre-construction conditions. All imported fill, including temporary culverts and road approaches, will be removed from the site and disturbed areas will be returned to pre-disturbance conditions. Because the project will be located in an existing ROW, clearing will be minimal.

Crews will install erosion control where needed. The crew will install temporary culverts and field approaches where needed to access the route and to maintain adequate access and drainage throughout construction.

Staging Areas

Designated staging areas store equipment, structures, and other necessary materials used during construction. In some cases, additional space (temporary laydown areas) may be required. Sufficient rights to use the temporary laydown areas outside of the transmission line right-of-way will be obtained from affected landowners through rental agreements. Insulators and other hardware are attached to the structure while it is on the ground adjacent to the location where the structure is to be placed.

DLPU anticipates using existing sites within their ownership, including the site of the new substation and a storage yard at the utility's electrical warehouse. There will be minimal staging of poles at each location in MNDOT's ROW until structures are set. No temporary easements will be needed for staging or construction.

³⁷ Application, P. 13.

³⁸ Generic Route Permit Template at 5.3.6.

Structure Installation

When it is time to install the poles, structures are moved from the staging areas, delivered to the staked location, and placed within the right-of-way until the structure is set. Typically, access to the transmission line right-of-way corridor is made directly from existing roads or trails that run parallel or perpendicular to the transmission line right-of-way. In some situations, private field roads or trails are used. Permission from the property owner is obtained prior to accessing the transmission line corridor outside of public rights-of-way. Where necessary to accommodate the heavy equipment used in construction (including cranes, concrete cement trucks, and hole- drilling equipment), existing access roads may be upgraded or new roads may be constructed. Once construction is complete any temporary field approaches and access roads installed for the Project will be removed and revegetated. Previously removed woody vegetation may be allowed to regrow so long as it does not encroach on NESC prescribed clearances and MNDOT safety requirements.

At this time, the Applicant anticipates the predominant method for securing the poles for the Project to be direct-embedment. To place direct-embedded single poles in the ground, the spoils are removed from the ground. Temporary casing may be required if the hole does not stay open during the excavation process. The pole is set and backfilled with crushed rock. The spoils will be removed from site unless other arrangements are made with the landowner. DLPU will not dispose of spoil materials within remnant prairie lands, areas restored to native plant communities, wetlands, protected water bodies, protected watercourses, or in a manner that could impact these areas through erosion or transport of the spoil materials. Concrete foundations will be used when warranted by site specific design criteria or circumstances. For concrete foundations, the excavation process will utilize temporary steel casing and rebar, concrete and anchor bolts will be placed in the hole. The standard projection of a concrete foundation is one foot above grade. Structures located in wet environments may require additional foundation support, typically consisting of a concrete foundation or placement of the structure base inside a vertical, galvanized steel culvert.

Conductor Stringing

Once structures are installed, conductors are strung along the line. Typically setup areas are approximately three times the height of the structure and as wide as the right-of-way width. Puller-tensioner sites are locations where the contractor will set up equipment to pull in and tension the conductor. Exact locations are unknown at this time. These locations are most often located at major obstacles such as turning points in the alignment. Conductors and a shield wire will be strung, tightened, and, once appropriate tension is obtained, secured to each structure. Crews will use temporary guard or clearance structures to provide adequate clearance over roads, existing power lines, waterways, or other potential obstructions, as well as to protect the conductor. Lastly, crews will install bird diverters on the shield wire in select locations; their placement will be coordinated with MDNR.

Other Construction Techniques

A number of construction techniques will be utilized for the project. These techniques, such as the timing of construction to minimize impacts, are common construction practices used industry-wide.

DLPU indicates that DLPU, or its contractor, will maintain sound water and soil conservation practices during construction and operation of the facilities to protect topsoil and adjacent water resources and minimize soil erosion.³⁹ Practices may include containing excavated material, protecting exposed soil and stabilizing restored soil.

³⁹ Application, P. 13.

DLPU indicates that impacts to wetlands will be minimized through construction BMPs⁴⁰. This means avoiding construction in wetlands if possible and avoiding major disturbance of individual wetlands and drainage systems during construction. This will be accomplished by strategically locating new access roads and spanning wetlands and drainage systems where possible. When it is not feasible to span the wetland, construction crews will rely on several options during construction to minimize impacts:

- When possible, construction will be scheduled during frozen ground conditions.
- Crews will attempt to access the wetland with the least amount of physical impact to the wetland (i.e., shortest route).
- The structures will be assembled on upland areas before they are brought to the site for installation.
- When construction during winter is not possible, construction mats will be used to minimize impacts to the extent practicable.

Restoration

Restoration will follow industry best practices and be completed as soon as possible after construction activities are over.

The ground will be disturbed during the normal course of work (as is typical of most construction projects), which can take several weeks in any one location. DLP indicates that it will restore areas disturbed by construction in accordance with BMPs and the Project's permit conditions. This will begin with a pre-construction survey that will identify areas requiring special restoration procedures. During construction, crews will also attempt to limit ground disturbance wherever possible. As construction on each parcel of land is completed, disturbed areas will be restored as nearly as possible to their original condition.

DLPU or its contractor will contact each property owner after construction is completed to identify and address any damage that may have occurred as a result of the construction of the HVTL project. If damage has occurred to crops, fences or the property, typically terms and conditions or the transmission easement agreement require the permittee to fairly compensate the landowner for damages.

In some cases, DLPU may engage an outside contractor to restore the damaged property to its original condition. Permanent vegetation that is disturbed or removed during construction of transmission lines will be reestablished to pre-disturbance conditions. Resilient species of common grasses and shrubs typically reestablish naturally with few problems after disturbance. Areas with significant soil compaction and disturbance from construction activities along the route will require assistance in reestablishing the vegetation stratum and controlling soil erosion.

Maintenance

Regular inspections will identify needed maintenance and repairs

Transmission lines are designed to operate for decades. Typically they require only moderate maintenance, particularly in the first few years of operation. The estimated service life of the proposed Project is approximately forty years. However, HVTLs are seldom completely retired.

⁴⁰ Id.

Transmission infrastructure includes very few mechanical elements, which results in reliability. It is built to withstand weather extremes, with the exception of severe weather such as tornadoes and heavy ice storms. Transmission lines 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 momentary. Scheduled maintenance outages are also infrequent. As a result, the average annual availability of transmission infrastructure is very high, in excess of 99 percent.

The principal operating and maintenance cost for transmission facilities is the cost of inspections, which will be performed monthly by either truck or by air. Inspections will be conducted to ensure that the transmission line is fully functional and that no vegetation has encroached so as to violate NESC prescribed clearances. Annual operating and maintenance costs for 115 kV transmission lines in Minnesota and the surrounding states are expected to be approximately \$300 to \$600 per mile.⁴¹ Actual line-specific maintenance costs depend on the setting, the amount of vegetation management necessary, storm damage occurrences, structure types, materials used, and the age of the line.

⁴¹ *Blazing Star Wind Farm 2 Route Permit Application* (April 11, 2018), P. 20, eDockets No. [20184-141857-02](#)

SECTION FOUR

Affected Environment, Potential Impacts and Mitigation

This section describes the existing state of resources that may be impacted by the proposed project, assesses potential project impacts, and identifies measures that could be taken to mitigate project impacts. The impacts of HVTL projects on the human and natural environment have been studied extensively by EERA staff as part of the preparation of dozens of environmental review documents. Through these efforts, the general concerns about the effect of HVTLs on the human and natural environment are well documented and the general impacts and mitigation are well understood. Where relevant, this EA draws on the existing body of work, referencing its general outcomes and conclusions rather than providing a detailed reiteration of the EERA's analysis.

Because there is only one route under consideration, the Commission's permitting decision centers on mitigation to address impacts consistent with state goals to conserve resources, to minimize environmental impacts, and to minimize human settlement and other land use conflicts.⁴²

The level of detail in the analysis in this section focuses on decisions about potential mitigation. Therefore, where a quantitative data analysis is relevant to the selection of appropriate mitigation, impact numbers are presented. However, where a more qualitative discussion of the nature and magnitude of impacts is sufficient to inform decisions regarding mitigation, detailed data analysis has not been included.

Finally, where other planned projects will have overlapping impacts on the resources affected by the proposed project, these cumulative effects have also been evaluated in the sections that follow.

Human Settlement

Impacts to human settlement are assessed by looking at a variety of factors including aesthetics, cultural values, displacement, electronic interference, land use and zoning, noise, recreation, socioeconomics, and public services and infrastructure.

The extent to which a project may impact these factors is closely correlated to how close the route is to human settlement areas. Aesthetic impacts to humans, for example, are expected to be greatest where the line is located nearest to homes, businesses, schools, daycares, hospitals, churches, and cemeteries. If a transmission line is routed close to human settlement areas, other features of these areas could also be impacted. For example, tree groves and wind breaks are frequently established to protect homes and other structures. Therefore, the potential for impacts to tree groves and wind breaks may be closely correlated with the proximity of the line to homes.

In the case of the proposed project, there are human settlement features located near enough to the project to be affected by construction and operation. The HVTL Project is located along US Highway 59 in Becker County Minnesota, just south of the city of Detroit Lakes. US 59 is a major transportation corridor in the county. The nearest population center is Detroit Lakes. In the surrounding area, human settlement

⁴² Minnesota Rules 7850.4000 Standards and Criteria

is a mix of year round and seasonal homes along lakeshores and local roads, with most businesses located along major roadways and towns. **Map 2 in Appendix A** depicts the residences and businesses adjacent to the project area.

The sections that follow evaluate how the project may impact human settlement and how these impacts may be mitigated. Given the location of the proposed project and proximity to major human settlement features, the most substantive impacts discussed below are those that may be experienced by individual residents and businesses along the route, as well as the traveling public. These impacts are primarily short term construction noise and disturbance to local traffic, and long term impacts to the view shed in the immediate project area.

Aesthetics

Aesthetic impacts have been avoided as much as possible through route design.

Aesthetics refer to the natural and human-modified landscape features or visual resources that contribute to the public’s experience and appreciation of the environment. Wetlands, surface waters, landforms, forests, and vegetation patterns are among the natural landscape features that define an area’s visual character, whereas buildings, roads, bridges, and other structures reflect human modifications to the landscape.

The level of impact to visual resources generally depends on the sensitivity and exposure of a particular viewer and can vary greatly from one individual to the next. It is, therefore, difficult to predict whether a transmission line project would alter the perceived visual character of the environment, or view shed, and constitute a negative visual impact. However, a concern with HVTL projects is that the structures and conductors change the viewshed in the project area, particularly the view from adjacent residences, in a way that viewers find unpleasant.

The project area is located within and near the City of Detroit Lakes in Becker County. The proposed HVTL alignment is located along US Highway 59 which serves as a major thoroughfare for Detroit Lakes and the surrounding area. Land use in the corridor includes a mix of agriculture, residential and commercial use. Commercial businesses along the route include public storage facilities, a liquor store, RV and Marine dealer, and a flea market area. Not only will the HVTL have an aesthetic impact on the businesses and residences along the route, it will also have an impact on those travelling through the area in US 59. **Table 2** shows the number of residential and commercial buildings within 200-feet of the ROW.

Table 2 Residential and Commercial Buildings within 200 Feet of the Anticipated Alignment

Building Type	Buildings within 50 ft.	Buildings within 50 to 100 ft.	Buildings within 100 to 200 ft.	Total Buildings within 200 ft.
Residential	0	7	7	14
Commercial	1	2	12	15

The visual impact of the project is expected to be most noticeable for residents and businesses in the immediate vicinity of the transmission line and substation. **Map 2** shows the location of commercial and residential properties along the length of the proposed project. There are no residences and one commercial building within fifty feet of the project alignment. There are a total 14 residences and 15 commercial buildings within 200 hundred feet of the project alignment. Impacts to residences have been

minimized in project design by routing the transmission line away from residences and business as much as possible and by using low profile, monopole structures.

Mitigation

Aesthetic impacts cannot be fully avoided, but have been minimized by utilizing an existing highway corridor and right-of-way. To further minimize aesthetic impacts, DLPU will: minimize tree clearing and trimming in the ROW; use a low profile monopole design with self-weathering steel; limit the number of overhead road crossings; and will restore the area to its pre-construction state as a condition of the *MnDOT Utility Accommodation Policy*. The design of the project is consistent with the conditions included in the Commission's generic route permit.⁴³ While burying transmission lines significantly reduce the aesthetic impacts of HVTL projects, it is cost-prohibitive compared to conditions in the generic route permit and those proposed by DLPU.

Cultural Values

The proposed project would not impact cultural values important to the community.

Cultural values can be described as shared community beliefs or attitudes, among a given area or population that define what is collectively important and worthwhile to the group. Major infrastructure projects can be inconsistent with the cultural values of an area, resulting in a deterioration of a community's shared sense of self.

Detroit Lakes and the surrounding area value the rich natural amenities of the region. Lakes, forests, and managed public lands enhance the lives of residents and provide an array of outdoor recreation opportunities that contribute to regional tourism economy.⁴⁴ In addition to the many natural resource amenities that draw tourists and second home owners, Detroit Lakes also hosts an annual summer music festival that draws large crowds.

Construction and operation of the project is not likely to impact natural resource amenities, recreational opportunities, or tourism in the area as the project does not cross public lands, trails, or waterways along the route. There may be some localized disruptions along US 59 during construction, but any disruptions would be of short duration and localized to the project area.

Mitigation

DLPU will minimize disruptions to tourism in the area and along US 59 by constructing the project outside of the peak summer tourism season restricting the location of the transmission line to the existing road ROW. There are no conditions included in the Commission's generic route permit that directly address mitigation for impacts to cultural values.

Displacement

No homes will be displaced by the proposed project.

For electrical safety code and maintenance reasons, utilities do not generally allow residences or other buildings within the ROW easement for a high-voltage transmission line. In this case, DLPU proposes to locate the proposed project entirely within the existing MnDOT ROW. Because MnDOT's ROW varies in

⁴³ Generic Route Permit Template Section 5.3.6

⁴⁴ *Becker County Recreational Plan* (2011). Retrieved May 1, 2019, [https://www.co.becker.mn.us/dept/parks_recreation/PDFs/Recreational_Plan\(6-28-2011\).pdf](https://www.co.becker.mn.us/dept/parks_recreation/PDFs/Recreational_Plan(6-28-2011).pdf).

width, so does the width of the transmission right-of-way. MnDOT's ROW can accommodate the ROW needed by DLPU for structure placement and to meet safety standards, while maintaining a 65 foot distance from the centerline of the road for roadway safety. Because the transmission line can be fully accommodated within MnDOT's ROW and no homes or businesses are located within the ROW, there will be no displacement as a result of the project.

Mitigation

Because no displacement impacts are anticipated, no mitigation is necessary.

Electronic Interference

Electronic interference can be mitigated through standard route permit conditions.

Electronic interference refers to an electronic signal disturbance that impairs the proper functioning of an electronic device. HVTLs can interfere with electronic communications (radios, two-way radios, TV, and microwave communication) in two ways. First, corona from transmission line conductors can generate electromagnetic "noise" at the same frequencies that communication signals are transmitted. This noise is not sound, but rather electromagnetic signals that can cause interference with the reception of communications depending on the frequency and strength of the signal. Second, transmission line towers can physically block communication signals through a "shadowing" effect.

Impacts from corona "noise" primarily occur in the radio frequency range. Radio interference from HVTLs is most relevant for AM signals. It typically occurs immediately under a transmission line and dissipates rapidly within the right-of-way to either side of the transmission line. FM radio receivers, however, usually do not pick up interference from transmission lines because corona-generated noise currents are quite small in the FM broadcast frequency band. Additionally, FM radio systems have inherent interference rejection properties that make them virtually immune to corona-noise type disturbances. GPS is typically not affected by transmission lines. If interference with electronic devices, including precision farming systems.

The impacts of corona noise were minimized by designing the project to avoid locating the line close to homes and business to the extent possible, thereby decreasing interference.

The blocking effect of transmission towers primarily impacts two-way mobile radio communications and television signals. Television interference is rare but may occur when a large transmission structure is aligned between the receiver and a weak distant signal, creating a shadow effect. Loose and/or damaged hardware may also cause television interference. A two-way mobile radio located immediately adjacent to and behind a large metallic structure (such as a steel tower) may experience interference because of signal-blocking effects. Telecommunication pathways can be blocked by transmission towers; however, in the case of this project, the route is located away from such towers and will not impact these communications.

Mitigation

Corona noise impacts to radio frequencies can be mitigated by increasing signal strength through antenna modifications. Where towers create a blocking effect, use of different antennas or satellite dishes, or adjusting their locations, will typically resolve any impacts to television signals.

In situations where a HVTL does cause electronic interference, Commission route permits include standard language requiring permittees to take actions which are feasible to restore or provide reception equivalent to reception levels before construction of the HVTL.⁴⁵

Land Use and Zoning

Land-Use impacts are primarily related to vegetation and erosion control and can be address through standard permit conditions.

Land use planning and zoning are tools used to manage land resources in a way that encourages orderly development and protects the resources and uses that are valued by people living in an area. If transmission lines are routed in areas where they are incompatible with existing or planned land uses, it can restrict land owners and communities from using their land resources in ways they prefer, getting in the way of efficient and organized use and development of land or compromising land and water quality.

The area of US 59 where the project is proposed is largely zoned agriculture with developed land uses such as residential and commercial and agricultural near the southern terminus. Residential development includes single family homes and a mix of commercial businesses as discussed earlier. The project area is located in District 12 of the City of Detroit Lakes' Comprehensive Plan, a two-mile extraterritorial area encompassing the city and important for future growth and development.⁴⁶

The proposed project is consistent with the planned and orderly growth of extraterritorial areas. The comprehensive plan also calls for the protection of the City's natural resources. The siting and construction of the proposed project minimizes impacts to natural resources, including soil and water resources, by utilizing the existing US 59 ROW and avoiding unnecessary greenfield development.

Mitigation

Standard mitigation measures are typically included in the Commission's generic HVTL route permit to protect soil and water resources.⁴⁷ The project conforms to the land uses and future growth and development identified in the comprehensive plan and will not impact future growth and development in the area.

Noise

Construction noise will impact nearby residences and businesses.

Noise is defined as unwanted and objectionable sound. Sound levels are usually measured and expressed in decibels (dB), which are logarithmic units that can be used to conveniently compare wide ranges of sound intensities. The A-weighted decibel (dBA) scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. On the logarithmic decibel scale, a 70 dBA sound level is approximately twice as loud as a 60 dBA sound level and four times as loud as a 50 dBA sound level.

The Minnesota Pollution Control Agency (MPCA) has developed protective standards for daytime and nighttime noise levels that vary based on land use at the location where the sound is heard ("noise area

⁴⁵ Generic Route Permit Template at Section 5.4.3.

⁴⁶ *City of Detroit Lakes Comprehensive Plan* (updated 2019), retrieved April 28, 2020, https://cityofdetroitlakes.com/vertical/Sites/%7BF991A069-E23D-412C-8132-49318B273050%7D/uploads/September_10_2019_-_Comprehensive_Plan.pdf

⁴⁷ Generic Route Permit Template at Section 5.3.7, 5.3.8 and 5.3.9

classification”). MPCA noise standards are provided in **Table 3**. These standards are expressed as a range of permissible A-weighted decibels (dBA) over a one-hour time period. “L₁₀” is the noise level may be exceeded 10 percent of the time, or six minutes per hour, while “L₅₀” may be exceeded 50 percent of the time, or 30 minutes per hour. Standards vary between daytime and nighttime hours.

Table 2 Noise Area Classifications (dBA)⁴⁸

Noise Area Classification by Type (NAC)	Daytime (7:00 a.m. to 10:00 p.m.)		Nighttime (10:00 p.m. to 7:00 a.m.)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀
1 Residential-type Land Use Activities	65	60	55	50
2 Commercial-type Land Use Activities	70	65	70	65
3 Industrial-type Land Use Activities	80	75	80	75

Community noise levels are usually closely related to the intensity of human activity. Noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, noise levels is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. As noted earlier, the project area is zoned agricultural, with a mix of residential and commercial uses within the highway corridor. Stands of trees are common outside of the road ROW and can buffer unwanted sound. Ambient noise in the area is considered moderate and generally between 45 and 60 dBA. Generally, noise concerns with HVTL projects are related to heavy equipment used in construction of the line, but minor amounts of noise are also generated during operation of transmission lines. The primary noise receptors within the route would be residences and local businesses.

Construction of the proposed project will cause intermittent increases in day-time noise levels at residences and businesses along the proposed route due to heavy equipment operation and increased vehicle traffic. Noise associated with heavy equipment can range between 80 and 90 dBA at full power, and this equipment generally runs at full power up to 50 percent of the time, so noise in the 80 and 90

⁴⁸ Minnesota Pollution Control Agency, May 2015. A Guide to Noise Control in Minnesota. Accessed online, May 2019. <https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf>.

dba range could persist for more than 30 minutes per hour. Although this noise will dissipate over distance, the equipment noise will contribute 72 dba at 400 feet and a 60 dba sound at 1,600 feet. As a result, during construction, noise levels at adjacent homes may periodically exceed state noise standards. Any exceedance of noise standards would be short-term and confined to daytime hours.

During operation, transmission lines can produce noise under certain conditions. Specifically, in foggy, damp, or rainy weather, they can create a crackling sound due to the small amount of electricity ionizing the moist air near the conductors. During heavy rain the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, transmission lines would produce audible noise approximately equal to household background levels. Because noise dissipates over distance, the small amount of transmission line noise will not noticeably change overall noise levels at homes along the route nor will it cause exceedances of the MPCA's protective standards. DLPU calculated audible L_{50} noise levels at 50 feet and 100 feet from centerline of the proposed HVTL. At 20 and 22 dba respectively. These noise levels are well below the MPCA limits for noise area classifications within the project area and in combination with background noise are not expected to cause or contribute to exceedances of the MPCA's total noise standards. No impacts to human health and wellbeing are anticipated.

Noise will also be generated during operation of the proposed substation. Substation transformers produce a humming noise. In addition, transformers and transmission lines are equipped with circuit breakers which, in the rare event that they are opened produce a sound associated with the mechanical operation of the breakers. This noise is not expected to notably affect existing background levels. Because noise dissipates over distance, the small amount of substation noise is not expected to notably change overall noise levels at nearby residences. The nearest residence is located approximately 380 feet south of the proposed substation site between US 59 on the east and County Road 17 on the west (see **Map 2, sheet 1**). The residential structure at the site of the substation is unoccupied and will be removed from the property prior to the anticipated in-service date in 2021.⁴⁹ Substation noise is not expected to cause or significantly contribute to exceedances of the MPCA's total noise standards and no impacts to human health and wellbeing are anticipated.

Mitigation

Standard language in Commission route permits requires permittees to adhere to MPCA noise standards which protect against impacts human health and welfare.⁵⁰

Construction noise can be mitigated to minimize the impact of any exceedances of the standard that may occur. Possible mitigation measures include the following:

- Conducting construction activities during normal business hours
- Equipping construction equipment with residential-grade mufflers
- Combining noisy operations to occur in the same time period. The total noise level produced will not be significantly greater than the level produced if the operations were performed separately.

⁴⁹ Application, P. 15.

⁵⁰ Generic Route Permit Template at Section 5.3.5.

Operational noise from the transmission line is not anticipated to significantly contribute to exceedances of the MPCA's total noise standards, therefore, no mitigation is proposed after construction is completed.

Recreation

The proposed project does not cross any trails, public lands, or other recreation areas.

Recreation includes outdoor leisure activities done for enjoyment, amusement, and pleasure. From hiking, to boating, and nature watching to hunting, transmission lines are a concern for recreation because they can 1) alter recreational resources in a way that diminishes their utility or 2) alter the visual setting in a way that changes the experience and reduces the user's enjoyment, amusement or pleasure. Both types of impacts tend to occur where the transmission line is located immediately adjacent to the recreational resource.

The proposed project is located in a region that is known for its outdoor recreation opportunities. The region includes vast areas of lakes, rivers and forests, making it a destination for outdoor recreation. The area offers opportunities for fishing, kayaking, boating, cycling, hiking, hunting, cross country skiing, and snowmobiling. There are no recreational lands, trails, or parks adjacent to the ROW as shown on **Map 3**, however, there are numerous lakes in the area, some of which are adjacent to the ROW on the east side of US 59.

A public golf course is located north and west of the proposed substation, with access available from County Roads 17 and 22.⁵¹ Access may be limited during construction of the substation when large equipment is moved to the site. Traffic control measures will be in place to manage the traffic flow. Visual impact of the HVTL from the golf course will be minimal due to the natural terrain and trees.

Direct impacts to existing recreational resources are not expected to occur as the proposed Route is located in an area that is adjacent to a major roadway as well as existing commercial and electrical infrastructure. During construction, the noise from increased vehicle traffic and construction activities may temporarily diminish the experience of those using recreational resources and may temporarily disturb the wildlife that is integral to the value of the recreational resource.

After construction is completed, impacts to recreational resources will primarily be visual in nature and limited to altering the aesthetic experience of persons using public or private property near the HVTL project. The presence of the transmission line could also cause bird collisions, but the presence of the line is unlikely to significantly affect avian populations in the area.

Mitigation

The Commission's generic route permit does not include conditions that directly address impacts to recreation. Since the project is not expected to have long-term permanent impacts to recreation amenities or pursuits along the project ROW, no mitigation is proposed. Potential impacts to avian species can be mitigated by following the recommendation made by the DNR during scoping and installing Swan-Flight type avian flight diverters spaced 15 feet along the entire 2.2 miles of transmission line.⁵²

⁵¹ Application, P. 21.

⁵² Minnesota Department of Natural Resources (December 26, 2019) *Comments*, eDockets No. [201912-158602-01](#), [201912-158602-02](#), [201912-158602-03](#)

Socioeconomics

Socioeconomic effects of the proposed HVTL projects will be nominal.

Socioeconomic factors provide an indication of how economic activity affects and is shaped by social processes. Socioeconomic measures tell us how societies progress, stagnate, or regress because of their local or regional economy, or the global economy. HVTL projects like this one can contribute to growth and progress at the local level over time, but it is not expected to have a significant socioeconomic impact.

The 2017 Community Survey conducted by the U.S. Census was used to develop **Table 4**. The population density of Lake View Township is 63.45 people per square mile, slightly more than that of Becker County (25.51 people per square mile). Lake View Township has a 4.3 percent minority population and 2.1 percent people living in poverty. Becker County has a 13.3 percent minority population and 12.7 percent people living in poverty. The new transmission line is not located in an area of disproportionately high minority populations or low-income populations.

Table 3 Population and Economic Characteristics

Location	Population	Minority Population (percent)	Caucasian Population (percent)	Per Capita Income	Percentage of Population Below Poverty Level
Lake View Twp.	1,853	4.3	95.7	\$37,865	5.9
Becker County	33,552	13.3	87.7	\$28,525	12.7
State of MN	5,490,726	16.3	83.7	\$34,712	10.5

Approximately 16 workers will be required for construction of the transmission line and the substation.⁵³ DLPU expects construction of the transmission line and substation to take approximately one year. There will be minor short-term positive economic impacts as a result of construction activity and an influx of contractor employees during construction of the project. DLPU will use contractors for all construction activities. Local businesses will likely experience short-term positive economic impacts through the use of the hotels, restaurants and other services used by contractors during construction. In addition, construction materials, such as concrete, may be purchased from local vendors where feasible. There will be no permanent positions created as a result of the project.

Property Values

Impacts to property value for particular parcels are anticipated to be small.

One of the primary socioeconomic concerns of many residing near existing or proposed transmission lines is how lines could affect the value of their property. In general there are three primary concerns raised regarding the potential impact of a nearby high-voltage transmission line on property value:

- Concern or fear of possible health effects from electric or magnetic fields: While no conclusive evidence of the effects of EMF on health exists, it is recognized that people's concerns about this issue can influence their decisions related to purchase of property.
- The potential noise and visual unattractiveness of the transmission line: The visual profile of transmission lines structures and wires may decrease the perceived aesthetic quality of

⁵³ Data Request to DLPU (May 6, 2020) and Application P. 23.

property. The transmission facility would not generate noise above the state noise standards, and is not considered an issue.

- Potential interference with farming operations or foreclosure of present or future land uses: On properties that are farmed, installation of a power line can remove land from production, interfere with operation of equipment, create safety hazards, and foreclose the opportunity to consolidate farmlands or develop the land for another use.

A recent literature review examined 17 studies on the relationship between transmission lines and property values.⁵⁴ The reviewers concluded that the studies indicate small or no effects on the sale price of properties due to the presence of transmission lines.⁵⁵

Direct impacts to property values from the new transmission line are anticipated to be minimal. While impacts to property values could occur, any potential impact would be difficult to attribute to the proposed project specifically. Because the new transmission line follows existing infrastructure, any impact from the transmission line would be incremental. The new transmission line would not significantly impact businesses or agriculture in the corridor.

Mitigation

While the Commission's generic route permit template does not address property value impacts directly, potential for impacts to property values can be mitigated by reducing aesthetic impacts, perceived health risks, and encumbrances to future land use. Property value impacts can also be mitigated through inclusion of specific conditions in individual easement agreements with landowners along the route. These agreements, however, are not within the scope of this EA.

Public Services and Infrastructure

The proposed project will have minor impacts to roadways during construction and operation. Other public services and infrastructure will not be impacted.

Public services and infrastructure include the systems that supply essential amenities like public water supplies, electricity, gas, internet and transportation by road, rail, and air. The primary concern with transmission lines is that construction activities can cause temporary disturbances to public services and infrastructure through traffic restrictions or utility outages. Typical operational concerns related to infrastructure are mainly compatibility with roadway expansion plans, and transportation safety requirements.

Transportation

Transportation infrastructure in the proposed project area includes Federal, County, and local roads. The proposed HVTL route runs parallel to US Hwy 59 and crosses county roads. Roadways can be impacted temporarily during construction and during maintenance of the transmission line. Impacts during construction and maintenance can include temporary traffic delays, road closures, and detours in the project area.

⁵⁴ The Effects of Transmission Lines on Property Values: A Literature Review, Journal of Real Estate Literature, 2010, [www.real-analytics.com/Transmission Lines Lit Review.pdf](http://www.real-analytics.com/Transmission%20Lines%20Lit%20Review.pdf).

⁵⁵ Ibid.

Traffic disruptions are expected to be temporary during construction of the transmission line and substation. DLPU indicates that it will coordinate with appropriate county and state roadway authorities to develop appropriate traffic control measures during construction and maintenance activities.

Structure placement along roadways can also impact future road expansions, particularly if structures are placed within the ROW. In such cases, utilities are responsible for any adjustments and/or relocation of the HVTL as necessary. DLPU has coordinated with MnDOT on structure placement within the ROW and will require a *Utility Accommodation on Trunk Highway Right of Way Permit* for the project to be located in MnDOT's ROW.⁵⁶

Mitigation

The Commission's generic route permit includes conditions to mitigate impacts to roadways.⁵⁷ DLPU is further mitigating impacts by: (1) timing construction to begin in the fall of 2020 to mitigate any unforeseen traffic obstructions during the busy summer tourism season and (2) coordinating with MnDOT to minimize impacts to US Highway 59.

Utilities

Construction and operation of the proposed HVTL is not anticipated to impact public service utilities. DLPU will survey the ROW to locate existing utilities and will consult with MNDOT on final structure placements to avoid other public service utilities.

Mitigation

Construction impacts to utilities can be avoided by marking underground utilities prior to construction and avoiding these areas during construction.

Emergency Services

Transmission lines have the potential to impact emergency services through interference with electronic communication systems or traffic delays. No impacts to communication systems are anticipated. Any required temporary lane closures on US Hwy 59 or County Roads will be coordinated with the MnDOT, local jurisdictions, and local emergency services providers to allow for safe access of police, fire, and other emergency vehicles.

Mitigation

DLPU will coordinate with local jurisdictions and emergency service providers during construction and operation to ensure emergency services are not disrupted.

Human Health and Safety

Impacts to human health and safety are assessed by looking at two main issues: electric and magnetic fields (EMF), and stray voltage.

The extent to which a project may raise concerns around EMF and stray voltage is correlated with the voltage of the line and how close the route is to human settlement areas. The sections that follow evaluate

⁵⁶ See *About MNDOT Permits*, Retrieved May 3, 2020, <https://www.dot.state.mn.us/utility/forms.html>

⁵⁷ Generic Route Permit Template at Section 5.3.13.

how the project may impact human health and safety and how these impacts may be mitigated. Given the distance from homes, the voltage of the line and the permittee's obligations for safe operation and proper maintenance of the line, no notable impacts to human health and safety are expected.

Electric and Magnetic Fields

The proposed project is consistent with the Commission's prudent avoidance approach and meets electric field limits.

Electric and magnetic fields (EMF) are invisible forces that result from the presence of electricity. EMF occurs naturally and is caused by weather or the geomagnetic field. Human-made EMF is caused by all electrical devices and is found wherever people use electricity.

In the case of transmission lines electric fields are created by the electric charge (i.e. voltage) on a conductor and are easily shielded or weakened by most objects and materials, such as trees and buildings.

Magnetic fields are created by the electrical current (i.e. amps) moving through a conductor. Similar to electric fields, the strength of a magnetic field decreases rapidly to background levels as the distance from the source increases. However, unlike electric fields, magnetic fields are not easily shielded or weakened by objects or materials.

A concern related to EMF is the potential for adverse health effects due to EMF exposure. Studies in the 1970s found a statistical correlation between childhood leukemia and EMF exposure. After several decades of study, a cause and effect relationship has not been established between EMF and health effects.⁵⁸

Currently, there are no federal regulations regarding allowable electric or magnetic fields produced by transmission lines in the United States. In Minnesota, the Commission has adopted a prudent avoidance approach in routing transmission lines. This means avoiding highly populated areas in routing when possible and maximizing the distance from homes (by placing the line across the road instead of in a front yard, for example). Since EMF levels drop off quickly to background levels with increasing distance from the centerline of a transmission line, these avoidance strategies minimize human exposure to EMF created by the HVTL. The prudent avoidance approach has been incorporated into project design by avoiding population centers and minimizing the proximity of homes and businesses to the HVTL.

In addition to prudent avoidance, the Commission has adopted a maximum electric field under HVTLs in Minnesota to 8.0 kV/m. It has not adopted a standard for magnetic fields. Maximum modeled electric field levels associated with the project are 0.78 kV/m directly under the centerline, well below the Commission's limits.⁵⁹

Another concern with EMF is potential interference of electric fields with implantable electromechanical medical devices, such as pacemakers, because at high enough levels electric fields may interfere with a pacemaker's ability to sense normal electrical activity in the heart, causing temporary asynchronous

⁵⁸ National Institute of Environmental Health Sciences and the National Institutes of Health (2002), *Electric and Magnetic Fields Associated with the Use of Electric Power*, Retrieved May 3, 2020, https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf.

⁵⁹ Application P. 17.

pacing (commonly referred to as reversion mode or fixed rate pacing). The pacemaker returns to its normal operation when the person moves away from the source of the interference.

In the case of transmission lines, however, electric field strength is well below the levels that cause such interference and the proposed project will not impact implantable medical devices.

Mitigation

The proposed project aligns with the Commission's prudent avoidance approach in routing transmission lines, minimizing the potential for health related impacts to the extent possible. EMF exposure levels can also be minimized by conductor configurations that facilitate phase cancellation between circuits. However, given the rapid dissipation of EMF with distance, such mitigation will not materially affect exposure levels at homes and businesses along the route.

Stray Voltage

Stray voltage concerns can be addressed through standard Commission permit requirements.

In general terms, stray voltage can be defined as "voltage caused by an electric current in the earth, or in ground water, resulting from the grounding of electrical equipment or an electrical distribution system."⁶⁰ Stray voltage encompasses two phenomena: neutral-to-earth (NEV) voltage and induced voltage.

Neutral-to-Earth Voltage

Electrical systems that deliver power to end-users and electrical systems within the end-user's business, home, farm, or other buildings are grounded to the earth for safety and reliability reasons. The grounding of these electrical systems results in a small amount of current flow through the earth. Stray voltage could arise from neutral currents flowing through the earth via ground rods, pipes, or other conducting objects, or from faulty wiring or faulty grounding of conducting objects in a facility. Stray voltage could exist at any business, residence, or farm which uses electricity— independent of whether there is a transmission line nearby.

NEV is typically experienced by livestock that contact one or more metal objects on a farm, for example, feeders, waterers, or stalls. Metal objects on a farm are grounded to earth through electrical connections. Livestock, by virtue of standing on the ground, are also grounded to earth. If an animal touches two points at different voltages (one at neutral voltage and the other near true ground),⁶¹ a small current will flow through the livestock to the ground because the animal completes the electrical circuit.⁶²

Effective grounding of an object is determined by a number of factors. In metal objects these factors include wire size and length, the quality of connections, the number and resistance of ground rods, and the current being grounded.⁶³ Likewise, a number of factors also determine the extent to which livestock are grounded, for example, if the animal is standing on wet versus dry ground.⁶⁴ Stray voltage results

⁶⁰ Edison Electric Institute (April 2005) *Glossary of Electric Industry Terms*, Washington, DC: Edison Electric Institute (2005).

⁶¹ North Dakota State University Agricultural Engineering Department (1986) *Extension Publication #108: Stray Voltage*: <https://www.ag.ndsu.edu/extension-aben/epq/files/epq108.pdf>.

⁶² Michigan Agricultural Electric Council (October 2008) *Stray Voltage: Questions and Answers*: <http://maec.msu.edu/Stray%20Voltage%20Brochure%202008.pdf>.

⁶³ North Dakota State University Agricultural Engineering Department (1986).

⁶⁴ Ibid.

from this difference in the effectiveness of grounding and on the resulting electrical currents. It can exist at any farm, house or business that uses electricity, independent of whether a transmission line nearby. If NEV is prevalent in an agricultural operation it can affect livestock health. This concern has primarily been raised on dairy farms because of its potential to affect milk production and quality. NEV is generally associated with electrical distribution lines and electrical service at a residence or on a farm. Transmission lines do not create stray voltage as they do not directly connect to businesses, residences, or farms.

Impacts to residences, businesses, or farming operations resulting from NEV are not anticipated. The proposed project does not directly connect to businesses or residences at any point along the route, and does not change local electrical service.

Induced Voltage

The electric field from a transmission line could extend to a conductive (metal) object in close proximity to the line, such as a vehicle or a fence. This may induce a voltage on the object. The magnitude of this voltage depends on several factors including the object shape, size, orientation, and location along the ROW.

If the objects upon which a voltage is induced are insulated or semi-insulated from the ground and a person touches them, a small current would pass through the person's body to the ground. This might be accompanied by a spark discharge and mild shock, similar to what could occur when a person walks across a carpet and touches a grounded object or another person.

The primary concern with induced voltage is the current flow (amps) through a person to the ground. Most shocks from induced current are considered more of a nuisance than a danger, but to ensure the safety of persons in proximity to a transmission line, the NESC requires that any discharge be less than 5 milliamps (mA). In addition, the Commission's electric field limit of 8 kV/m is designed to prevent serious hazard from shocks due to induced voltage under transmission lines. Route permits issued by the Commission require that transmission lines be constructed and operated to meet NESC standards and the Commission's electric field limit.

Impacts due to induced voltage are not anticipated to occur as a result of the operation of the new transmission line. The new transmission line may induce a voltage on insulated metal objects near the transmission line ROW; however, the Commission requires that transmission lines be constructed and operated to meet NESC standards as well as the Commission's own electric field limit of 8 kV/m, reducing these impacts.

Mitigation

Impacts from NEV as a result of the proposed project are not anticipated; therefore, no mitigation is proposed. If a person has a question or concern about stray voltage on their property they should contact their electrical service provider to discuss the situation and the possibility of an on-site investigation.

Potential impacts as a result of induced voltage are reduced or avoided by Commission permit requirements for grounding and electric field strength.⁶⁵ As a result, potential impacts are not anticipated and further mitigation is not proposed.

⁶⁵ Generic Route Permit Template Section 5.4.1 and 5.4.2.

Land-Based Economies

Impacts to land-based economies are assessed by looking at how the project may affect the availability of land and resources that fuel economic activity in industries like agriculture, mining, tourism, and forestry. The extent to which a project may impact these industries is closely correlated with how much the project will encumber lands earmarked for use by the industry. In this way, impacts to land-based economies are tied to land use impacts like those discussed above in the Human Settlement impact analysis.

In the case of the proposed project, the primary economic concern is potential for disruption to farm land and agricultural activity. The sections that follow summarize the Project's potential impact on farming, but also address tourism since recreational lands in the project area could support some local tourism. There are no other relevant land-based economies (forestry, mining) in the area potentially impacted by the project; thus, these two land-based economies are not addressed.

Agriculture

The project is located within the MnDOT ROW and will not impact agriculture adjacent to the route.

Agriculture is the cultivation of land and breeding of animals and plants to provide food, fiber, medicinal plants and other products to sustain and enhance life. Where transmission lines pass directly through agricultural lands, construction can interrupt cultivation of crops and disrupt livestock. The ongoing presence of structures and conductors over the life of the HVTL project can be inconvenient for operation of farming equipment and may prohibit aerial spraying and/or seeding operations.

The proposed HVTL is located within MnDOT's ROW along US 59. No poles will be placed in agricultural lands and the project will not impact adjacent agricultural operations.

Mitigation

The proposed alignment of the HVTL is within the existing MnDOT ROW, there are no anticipated impacts to agriculture land, therefore no mitigation measures are proposed.

Tourism

Impacts on tourism are similar to impacts on recreation and can be addressed through the same mitigation measures.

Tourism is travel for pleasure and entertainment. The project area is located in a region known for its outdoor recreation opportunities and is a destination for summer tourism.⁶⁶ Transmission lines may have a negative impact on recreational activities if the transmission line interferes with the natural resources that provide these activities, for example, changing the aesthetic of a recreational destination in a way that reduces visitor use. Alternatively, a transmission line might increase recreational opportunities, for example, a ROW through a previously wooded area might provide increased opportunities for hunting or wildlife viewing. Transmission lines can impact tourism if they affect the overall experiences of visitors, either through aesthetic impacts, noise, or degradation of the recreational resources. There are no State Parks, State Forests, Scientific and Natural Areas (SNA), Wildlife Management Areas (WMA), county parks, or federal forests or refuges within the proposed route.

Similar to recreational impacts, the proposed route would have minimal impacts on tourism activities and nearby tourist destinations. The proposed route is located within the existing US 59 highway corridor, so

⁶⁶ Application, P. 26

new impacts to recreation areas is not expected. Some tree clearing will be required along the route and may alter the visual aesthetics of the area. There may be short-term temporary impacts to traffic on US 59 during construction, such as lane closures or delays due to equipment, but this will be minimized by timing construction outside of height of summer tourism.

Because of the proximity of the project to lakes and wetlands in the project area and adjacent to the ROW, there may be impacts to avian species as a result of the transmission line, such as changes in flight patterns and collision with the HVTL. These impacts can be mitigated by the use of avian flight diverters and are not likely to materially alter tourism in the area.

Mitigation

Similar to recreation, the Commission's generic route permit does not include conditions that directly address impacts to tourism. Temporary construction impacts will be minimized by to timing construction outside of the summer tourism season. Long-term impacts resulting from tree clearing will be minimized by reducing the amount of tree clearing to the extent practicable, and restoring the area following construction. Impacts to avian species can mitigated by following the recommendation made by the DNR during scoping and installing Swan-Flight type avian flight diverters spaced 15 feet apart on the on the portion of the route paralleling the WMA.⁶⁷

⁶⁷ Minnesota Department of Natural Resources (December 26, 2019) *Comments*, eDockets Nos. [201912-158602-01](#), [201912-158602-02](#), [201912-158602-03](#).

Archeological and Historic Resources

Further studies and coordination with SHPO are necessary to properly address mitigation.

Archeological resources are locations where objects or other evidence of archaeological interest exist, and can include aboriginal mounds and earthworks, ancient burial grounds, prehistoric ruins, or historical remains.⁶⁸ Historic resources are sites, buildings, structures, or other antiquities of state or national significance.⁶⁹

The concern with the construction of HVTL projects is that archaeological sites could be disturbed or destroyed by construction equipment if they are not identified and avoided in routing or properly protected during construction.

DLPU contacted the Minnesota Historical Society State Historic Preservation Office (SHPO) concerning the presence of historic properties in the project vicinity. SHPO recommended that an archaeological survey be completed if the project location could not be documented as previously disturbed or previously surveyed.⁷⁰ DLPU considers the ROW to be “previously disturbed” since the project location is located in public ROW with existing underground utilities, and that an archaeological survey would not need to be completed. Even though the ROW contains underground utilities, DLPU has not provided information on previous surveys that would indicate the proposed project would not impact to historic or archaeological resources.

Mitigation

Avoidance of known archaeological and historic resources is the preferred mitigation strategy. The Commission’s standard route permit conditions require that permittees mitigate potential impacts by requiring stopping construction and contacting SHPO to determine how best to proceed.⁷¹ The standard permit condition requires that ground disturbing activity stop and local law enforcement be notified should human remains be discovered.⁷² Continued coordination with SHPO and supplying information of known cultural and archaeological resources within the ROW and substation parcel is needed prior to the start of construction.

⁶⁸ See Minn. Stat. 138.31, subd. 14.

⁶⁹ See Minn. Stat. 138.51.

⁷⁰ Application, P. 27.

⁷¹ Generic Route Permit Template at Section 5.3.14.

⁷² *Ibid.*

Natural Resources

Impacts to the natural environment are assessed by looking at a variety of resources including air quality, geology and soils, water resources, flora, fauna, and rare and unique resources. For the most part, impacts of an HVTL project on these resources are associated with construction directly across or through a resource area. For example, water resource impacts primarily occur where the route requires a wetland or waterbody crossing. In some cases, however, routing in close proximity, even without a crossing can have some effect on natural resources. Wildlife near the construction area, for example, may be disturbed by noise from construction equipment.

The proposed project is routed in the existing US 59 highway corridor and utilizes MNDOT's ROW. **Map 3** in **Appendix A** shows the location of natural resources adjacent to the project ROW and in its vicinity. The sections that follow evaluate how the project may impact natural resources and how these impacts may be mitigated.

Air Quality

Air quality impacts are primarily related to fugitive dust from construction and can be mitigated through standard permit conditions.

Air quality is a measure of how pollution-free the ambient air is and how healthy it is for humans, other animals, and plants. Emissions of air pollutants during construction and operation of new infrastructure can cause concern about degradation of air quality.

Overall air quality in Minnesota has improved over the last 20 years, but current levels of air pollution still contribute to health impacts.⁷³ Air quality in the project area is relatively better than more populated areas of the state, e.g., Minneapolis and St. Paul.

Potential air quality impacts due to the project are of two types: (1) emissions of ozone and nitrous oxide during operation, and (2) dust caused by construction activities.

Ozone and Nitrous Oxide

Transmission lines have the potential to produce small amounts of ozone (O₃) and nitrous oxide (NO_x). These compounds are created by the ionization of air molecules surrounding the conductor. Ozone production from a conductor is proportional to temperature and sunlight and inversely proportional to humidity.

Ozone and nitrous oxide are reactive compounds that contribute to smog and can have adverse impacts on human respiratory systems.⁷⁴ Accordingly, these compounds are regulated and have permissible concentration limits. The State of Minnesota has an ozone limit of 0.08 parts per million (ppm).⁷⁵ The federal ozone limit is 0.07 ppm.⁷⁶ Ozone and nitrous oxide emissions from the new 115 kV line are anticipated to be well below these limits.⁷⁷

⁷³ Air Quality in Minnesota, 2015 Report to the Legislature, <http://www.pca.state.mn.us/index.php/about-mpca/legislative-resources/legislative-reports/air-quality-in-minnesota-reports-to-the-legislature.html>.

⁷⁴ <https://www.epa.gov/criteria-air-pollutants>

⁷⁵ Minn. R. 7009.0800, <https://www.revisor.mn.gov/rules/?id=7009.0080>.

⁷⁶ <https://www.epa.gov/ozone-pollution/2015-national-ambient-air-quality-standards-naaqs-ozone>

⁷⁷ Application, P. 28

Construction Dust

Dust from construction activities, or fugitive dust, is a particulate air pollutant. Construction activities along the proposed route, such as clearing vegetation and driving utility poles, may create exposed areas susceptible to wind erosion. Construction of the project will create dust and cause emissions from construction vehicles, i.e., diesel exhaust. The magnitude of emissions is dependent on weather conditions and the specific construction activity taking place. Any adverse impacts are anticipated to be localized, minimal, and temporary.

Mitigation

Construction related best practices can be used to mitigate fugitive dust. DLPU indicates that it will implement best practices to minimize dust during construction.⁷⁸ These practices include application of water or other commercially-available dust control agents on unpaved areas subject to frequent vehicle traffic, reducing the speed of vehicular traffic on unpaved roads, and covering open-bodied haul trucks.

Since operation of the project will not measurably impact air quality, no operational mitigation measures are necessary.

Geology and Soils

Impacts to geology and soils can be addressed through final engineering design and the application of construction best practices and standard Commission permit conditions.

Geology and soils form surface and sub-surface landscape features where HVTL structures are anchored. Geologic and soil conditions can impact a project and likewise, a project can impact geology and soils. Local geology and soil conditions can affect the structural viability of placing power poles in certain sites, but construction activities can also affect local geology and soil conditions through degradation and erosion.

The topography along the project area is relatively level. Depth of glacial drift over bedrock in the Hardwood Hills Subsection varies from 100 to 500 feet, with the greatest depths in the northwestern portion of the subsection. Underlying bedrock is diverse and includes areas of sandstone, shale, and granite among others. Loamy soils are prevalent throughout the subsection.

Soil compaction and rutting will occur from movement of construction vehicles along the right-of-way. Installing structures requires removing and handling soils, which, along with vegetation clearing and minor grading, will expose soils to wind and water erosion. Topsoil could be lost to improper handling or erosion.

Structures for the DLPU project will generally be installed at existing grade; therefore, landscape-level impacts to soils and geology are expected to be minimal. Because there is very little elevation change along the proposed route only minimal grading will be needed. DLPU will grade the site back to as close to its original condition as possible, and all imported fill, including temporary culverts and road approaches, will be removed from the site and disturbed areas will be returned to pre-disturbance conditions. Because the physical footprint of the proposed HVTL project does not overlap with other projects proposed nearby, cumulative impacts to the same soil and geological resources are not expected.

⁷⁸ Id.

Long-term impacts of the project on geology and soils are not anticipated. During final design geotechnical analysis will ensure that placement of poles is compatible with local geology and post construction restoration will prevent ongoing erosion issues.

Mitigation

Potential impacts to soils can be mitigated by using BMPs and standard construction practices. A variety of methods can be used to minimize soil erosion. Common mitigation measure employed to minimize soil erosion include:

- Promptly seeding to establish temporary or permanent vegetative cover on exposed soil.
- Using mulch to form a temporary and protective cover on exposed soils. Mulch can help retain moisture in the soil to promote vegetative growth, reduce evaporation, insulate the soil, and reduce erosion. A common mulch material used is certified weed free hay or straw.
- Erecting or using sediment control fences that are intended to slow water flow, filter runoff, and promote the settling of sediment out of runoff via ponding behind the sediment fence.
- Using erosion control blankets and turf reinforcement mats that are typically single or multiple layer sheets made of natural and/or synthetic materials that provide structural stability to bare surfaces and slopes.
- Separating topsoil and subsoil and covering stockpiled soils.
- Returning locations where grading or temporary access is required to their original land contour and elevation to the greatest extent possible.

Soil erosion mitigation measures are standard Commission permit conditions⁷⁹ and DLPU's route permit application commits to implementation of common BMPs.

Water Resources

Potential water resource impacts associated with construction can be mitigated by routing and utilizing Best Management Practices (BMPs) during construction.

Water resources include surface water bodies and water courses, wetlands, and ground water that supply water for drinking, irrigation and industrial uses, provide wildlife habitat, and serve as swimming and fishing resources for people. While transmission lines are not a direct source of ongoing pollutant discharge to either surface or groundwater, temporary impacts associated with construction runoff and long term changes in vegetative cover within the right of way can cause degradation of water resources.

The proposed route is located within the Otter Tail River watershed, following US 59 between Lake Melissa to the west and smaller lakes and wetlands to the east as shown on **Map 3**. Structures will not be placed in wetlands, waterbodies, and PWI watercourses. Utilizing the existing MNDOT right-of-way avoids permanent impacts to surrounding wetlands, waterbodies, watercourses or mapped floodplains. Watershed scale impacts and overlapping impacts with other proposed projects in the area are not expected.

Short-term construction impacts on water quality are possible with the installation of poles 28-30 near Lind Lake (**Map 2**) where it abuts the existing ROW. Impacts may include sedimentation resulting from ground disturbed by excavating, grading, and construction traffic. Similarly, short term water quality impacts could be experienced at wetlands along the route due to sedimentation. Long term impacts,

⁷⁹ Generic Route Permit Template Section 5.3.7

however, are not expected as the poles will be placed outside of wetlands and the primarily freshwater emergent wetlands present along the route are not characterized by woody vegetation that would need to be altered for safe operation of the line. Construction of the substation is not expected to impact water resources.

Mitigation

Formal field wetland delineations will be conducted along the proposed route prior to construction to determine the extents of wetlands and waterbodies. If the HVTL Project will permanently or temporarily impact waters of the U.S., Minnesota PWIs, jurisdictional wetlands or 100-year floodplains, DLPU will apply for the necessary permits prior to construction and will work with officials to identify appropriate mitigation for these impacts. Prior to construction, a Stormwater Pollution Prevention Plan will be prepared to control sedimentation during construction, and a National Pollutant Discharge Elimination System (“NPDES”) permit will be obtained. These permits will establish site specific measures to mitigate soil erosion and protect water quality.

DLPU plans to span the wetland near Lind Lake and will implement established BMPs, such as silt fencing and erosion control during construction to prevent sedimentation in lakes and wetlands. This mitigation measure is consistent with standard conditions in the Commission’s generic route permit.⁸⁰

Groundwater

Minor localized impacts to shallow groundwater may occur.

Potential impacts to groundwater can occur where installation of structures requires drilling to depths that can penetrate shallow water tables or open access channels to deeper aquifers. As noted earlier, structures are anticipated to be directly embedded. If concrete foundations are used, some portion of the soluble components of the concrete can leach into groundwater prior to the setting and hardening of the concrete. If dewatering is necessary to place the foundations, the water removed from foundation sites could contain sediments or pollutants that may be introduced into surface waters, which can have an impact on groundwater.

Impacts to surface waters can also lead to impacts to groundwater. For example, construction activities can directly or indirectly lead to increased turbidity of surface waters through sedimentation. These contaminated surface waters might then flow to groundwater. Such impacts are typically minor and localized.

Mitigation

Impacts to groundwater can primarily be mitigated by avoiding or minimizing impacts to surface waters. Mitigation measures to protect surface water is discussed above.

Vegetation

Impacts to natural vegetation would be minimal due to use of existing rights-of-way.

Construction of transmission lines often requires the removal or disturbance of vegetation during construction. Additionally, vegetation may be impacted if invasive or non-native species is introduced to the ROW during construction or restoration, or by changes in habitat (e.g., soils, water flows) that adversely impact plant growth.

⁸⁰ Generic Route Permit Template Section 5.3.9.

Construction and operation of the proposed project may cause short-term and/or long-term impacts on vegetation. Land cover along the proposed route is primarily developed, with areas of farmland and woodland adjacent to the ROW. Long-term impacts will primarily be a result of tree trimming and removal in the ROW. Removal of trees may also impact the visual aesthetics of the corridor. DLPU indicates that it will minimize the extent of tree trimming and removal to the extent practical. Maintenance of the ROW will conform to MnDOT safety requirements as well meeting electrical safety standards, therefore woody vegetation that is removed from the ROW is unlikely to be replaced. Impacts to trees and woody vegetation are not expected to construct the substation, which will be located in an open area of the parcel. DLPU will consult with MnDOT regarding post-construction site restoration and implement specific restoration practices as required.

Mitigation

The Commission's standard permit contains conditions sufficient to minimize impacts to vegetation.⁸¹ DLPU will further reduce the extent of tree removal and trimming to the extent practicable to maintain the visual aspect of the area and consult with MNDOT on specific restoration requirements within the ROW.

Mitigation measures to reduce the spread of nonnative plant species during construction include: regular frequent cleaning of construction equipment and vehicles; minimization of ground disturbance to the greatest degree practicable and rapid revegetation of disturbed areas with native or appropriately certified weed-free seed mixes; conducting field surveys of the ROW prior to construction to identify areas that currently contain noxious weed (weed surveys during construction would identify infestations of the ROW and staging sites); attending to any new infestations within the ROW as soon as practicable.

Wildlife

Primary impacts to wildlife are associated with avian collisions which can be mitigated through the use of bird flight diverters.

The landscape types and vegetation communities throughout the project area provide forage, shelter, nesting, overwintering, and stopover habitat for a wide range of resident and migratory wildlife species; wildlife species may include ruffed grouse, sharp-tail grouse, partridge, rabbits, squirrels, red and gray fox, raccoon, deer, bear, muskrat, mink, beaver, migratory waterfowl (geese, ducks, trumpeter swans, herons) and various birds (meadowlark, field sparrow, thrush, woodpeckers, shore birds). Habitat types in the project area are diverse and range from grasslands habitat types to forested habitat types.

Construction and operation of the proposed project may cause short-term and long-term impacts on wildlife resources. Impacts on wildlife are assessed by evaluating the vegetation cover/habitat in the ROW, the proximity of the ROW to sensitive wildlife habitats, and known occurrences of sensitive wildlife species. In this case, the proposed project will be located in a developed highway corridor, minimizing impacts associated with habitat fragmentation and destruction.

As discussed above, the ROW will be maintained to meet roadway and electrical safety standards, which favors low-growing non-woody vegetation. Emergency repairs may require additional vegetation clearing. Operation, maintenance, and emergency repair activities may have long-term indirect impacts on wildlife,

⁸¹ Generic Route Permit Template Section 5.3.9

including the displacement of birds, burrowing animals, and other species utilizing the ROW or its vicinity for foraging, breeding, or nesting. These impacts are expected to be long-term and localized.

The primary risk to wildlife in the project area is the potential risk of avian collisions with transmission conductors and equipment, which could result in injury or death of individuals. There are no public lands, county parks, or federal forests or refuges within or adjacent to the proposed route, which minimizes impacts and disturbances to wildlife. However, due to the proximity and number of lakes and wetlands in the project area, there may be impacts such as changes in flight patterns, nesting, foraging, and potential collision risk as a result of the HVTL.

Mitigation

To help mitigate any avian collisions with the HVTL, DLPU will install bird flight diverters in areas that are migratory bird flight areas and near wetlands. MDNR recommends installing Swan-Flight type avian flight diverters spaced 15 feet apart on the shield wire for the entire length of the project given that US 59 bisects the lakes and wetlands on the west and east sides of the project.

Rare and Unique Resources

Impacts to rare and unique resources are not expected because the project avoids sensitive habitat.

Rare and unique resources include assemblages of species or habitat that are designated for special care and conservation by state and federal agencies because loss of habitat and small or shrinking population is cause for concern. Construction activities and clearing of habitat for projects like transmission lines can cause habitat damage and loss or result in injury or death of individuals of these rare and unique population.

To help track special habitat, the MDNR maps sites of biodiversity significance. A site's biodiversity rank is based on the presence of rare species populations, the size and condition of native plant communities within the site, and the landscape context of the site. There are four biodiversity significance ranks: outstanding, high, moderate, and below. Meadow Lake, on the east side of US 59, is a Lake of Moderate Biological Significance and contains records of a fish species, the least darters (*Etheostoma microperca*), which is listed as a state species of special concern (**Map 3**). Meadow Lake also contains an aquatic management area (AMA), Meadow Lake Aquatic Management Area. While the route width is adjacent to the both Meadow Lake and the Meadow Lake Aquatic Management Area, the alignment of this project is located on the west side of US 59, away from sensitive aquatic resources. No impacts to the least darters or the AMA is anticipated.

In addition to looking at habitat, reviewing state and federal databases can help identify the potential presence of rare and unique species in a project area. For the proposed project, the Minnesota Natural Heritage Information System (NHIS), MDNR and USFWS were consulted by DLPU to identify potential rare species in or near the proposed route. Twenty one threatened, endangered, and species of special concern have been identified in Becker County.⁸² Of those, only the least darters, a state species of special concern, was identified within the route width as described above. The proposed project is not expected to impact threatened, endangered, or species of special concern and further minimizes potential impacts by utilizing an existing roadway corridor and ROW, which tends to minimize the impacts on rare and unique natural resources (vegetation, wildlife, and natural communities).

⁸² Application, Appendix A2.

Mitigation

As part of the standard vegetation management plan requirement, or as a special condition in the HVTL route permit (**Appendix C**), DLPU may be required to conduct field surveys to identify any rare species prior to construction within the ROW of the selected route.

Section Five

Cumulative Potential Effects

Cumulative impacts include those associated with the proposed project and impacts that may occur as a result of other projects in the project area.

Cumulative potential effects result when impacts associated with the proposed project are combined with impacts associated with past, present, or reasonably foreseeable future actions within the area. Analysis of cumulative potential effects accounts for the possibility that, added together, the minor impacts of many separate actions could be significant. This cumulative potential effects analysis considers resources that are expected to be affected by the proposed project and assesses past, present, and reasonably foreseeable future actions to identify any geographic or temporal overlap in impacts on these resources.

When making the determination as to what is “reasonably likely to occur”, EERA considers whether any applications for permits have been filed with any units of government or whether detailed plans and specifications have been prepared for the project, among other considerations.⁸³ A project need not be permitted to be reasonably likely to occur.

Past actions are those actions and their associated impacts that occurred within or influenced the geographic region of influence of each resource and have shaped the current affected environment of the proposed project area. For the purposes of this EA, actions that have occurred in the past (e.g. expansion of US 59) and associated impacts are now part of the existing environment and are included in Section Four.

In addition to temporal factors, the potential for cumulative impacts also depends on spatial factors within the environment, which can vary for the resources evaluated in this EA. For example, the geographic area of consideration for cumulative impacts could be limited to the discrete area of disturbance for vegetation resources but also include all vantage points for visual resources.

EERA is unaware of any reasonably foreseeable projects within the project area. DLPU has consulted with the City of Detroit Lakes and MnDOT regarding potential future development and roadway work. There are no known development plans for the two mile project area identified in the *City of Detroit Lakes Comprehensive Plan (2019)* or identified by DLPU. The comprehensive plan notes that the area along US 59 is constrained by lakes and wetlands, but will “likely be developed in coming years.”⁸⁴ Even if limited development in the area occurs in the future, the cumulative effects of the proposed project would be minimal within the existing corridor given the relatively small size of the proposed project, the anticipated minimal human and environmental impact, and its location within the existing highway corridor.

Associated Actions

Associated actions occur as a result of the proposed project. In this case, the project proposed by DLPU cannot occur without a tapping into GRE’s Existing 115 kV Line at the southern terminus. GRE will construct a switch structure ten feet outside of the right of way on private property. The impact of this structure includes construction impacts and aesthetic impacts as described earlier in this document.

⁸³ Id.

⁸⁴ *City of Detroit Lakes Comprehensive Plan (2019)*, P. 127.

Unavoidable Impacts

Resource impacts are unavoidable when an impact cannot be avoided even with mitigation strategies.

Transmission lines are infrastructure projects that have unavoidable adverse human and environmental impacts. These potential impacts and the possible ways to mitigate against them were discussed above. However, even with mitigation strategies, certain impacts cannot be avoided.

Unavoidable adverse impacts associated with construction of the proposed project include:

- Possible traffic delays and fugitive dust on roadways.
- Visual and noise disturbance to nearby residents and recreationalists.
- Soil compaction and erosion.
- Vegetative clearing.
- Disturbance and temporary displacement of wildlife, as well as direct impacts to wildlife inadvertently struck or crushed during structure placement or other activities.
- Minor amounts of habitat loss.

Unavoidable adverse impacts associated with the operation of the proposed project include:

- Visual impact of structures and conductors.
- Injury or death of avian species that collide with, or are electrocuted by, conductors.
- Potential decrease to property values.
- On-going maintenance of woody vegetation (tree trimming and removal).

Irreversible and Irrecoverable Resource Commitments

Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use; an irretrievable commitment of resources means the resource is not recoverable for later use by future generations.

Irreversible impacts include the land required for construction of the transmission line. While it is possible that the structures and conductors could be removed, the ROW would still be maintained for transportation safety purposes.

An irretrievable commitment of resources means the resource is not recoverable for later use by future generations. These impacts are primarily related to project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources. The commitment of labor and fiscal resources is also considered irretrievable.

Appendix A Maps

Map 1 Project Overview

Map 2 Proposed 115 kV Transmission Line Corridor and Right-Of-Way

Map 3 Natural Resources

Appendix B Transmission Structure Diagrams

Appendix C Generic Route Permit Template

Appendix D Scoping Decision