Environmental Assessment

Wabasha 161 kV Transmission Line Relocation Project

Docket No. ET3/TL-23-388

Minnesota Department of Commerce
Energy Environmental Review and Analysis

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ABSTRACT

Dairyland Power Cooperative (Applicant or Dairyland) is proposing to relocate approximately 13.3 miles of 161 kilovolt (kV) high voltage transmission line and construct a new substation in Wabasha County, Minnesota (referred to as the Wabasha 161 kV Transmission Line Relocation Project, or the Project). The Project starts in Plainview Township, northeast of Plainview, and traversing northeast through Highland, Watopa, and Greenfield Townships, ending east of Kellogg near the Mississippi River.

The Project is a reroute of approximately 10.4 miles of the existing Dairyland LQ34 161 kV transmission line, which is presently located on the existing CapX2020 Hampton-Rochester-LaCrosse 345 kV structures. In July 2020, the Midwest Independent System Operator (MISO) approved a long-range transmission portfolio, including a new Wilmarth-North Rochester-Tremval transmission line. This new 345 kV line will use the double-circuit capability of the CapX2020 system between North Rochester, Minnesota and Alma, Wisconsin. Consequently, Dairyland's existing 161 kV transmission line must be removed from the existing CapX2020 structures and relocated to make room for the new 345 kV circuit on the CapX2020 structures. The Project will involve installation of 70- to 110-foot-high steel monopoles placed 400- to 800-feet apart within a 100-foot-wide right-of-way. In addition to the transmission line, construction of a new 4.0-acre substation located on a 10.8-acre site off of County Road 84, southeast of Kellogg is also proposed as part of this Project.

Dairyland submitted its Route Permit Application (RPA) on March 27, 2024, to the Minnesota Public Utilities Commission (Commission). The application was filed pursuant to the alternative review process outlined in Minnesota Statute § 216E.04 and Minnesota Rule (Minn. R.) 7850.2800 through Minn. R. 3900. In an Order dated May 7, 2024, the Commission accepted the HVTL RPA as complete.

Minnesota Department of Commerce (DOC or Department), Energy Environmental Review and Analysis (EERA) staff is responsible for conducting environmental review for route permit applications submitted to the Commission. Accordingly, EERA held a scoping meeting in Kellogg on June 12, 2024, and a virtual meeting on June 11, 2024. This EA addresses the issues required in Minn. R. 7850.3700, subpart 4, and those identified in the Department's September 24, 2024, EA Scoping Decision.

Following release of this EA, a public hearing will be held in the project area. 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 the Commission with a report. The report will include findings of fact, conclusions of law, and recommendations. The ALJ report and the entire record will be submitted to the Commission to aid their decision regarding the route permit.

A decision on the route permit for the proposed Project is anticipated in the summer of 2025.

Persons interested in this Project can place their name on the Project mailing list by contacting the Commission at docketing.puc@state.mn.us or 651-201-2204 to sign up.

Additional documents and information can be found on the EERA website at: http://mn.gov/commerce/energyfacilities/Docket.html?Id=15078 or the Minnesota eDockets webpage at: https://www.edockets.state.mn.us/EFiling/search.jsp by selecting "23" for year and "388" for number.

ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

AC	alternate current
ALJ	administrative law judge
AM	amplitude modulation
APLIC	Avian Power Line Interaction Committee
APR	Applicant's Proposed Route
ATV	all-terrain vehicle
ATWS	additional temporary workspace
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMPs	best management practices
BSWR	Board of Soil and Water Resources
CMSP	Chicago, Milwaukee, and St. Paul
CN	Certificate of Need
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Commission	Minnesota Public Utilities Commission
CWI	County Well Index
dBA	a-weighted sound level recorded in units of decibels
Department or DOC	Minnesota Department of Commerce
DKey	Determination Key
DNA	deoxyribonucleic acid
DWSMAs	Drinking Water Supply Management Areas
EA	Environmental Assessment
EERA	Energy Environmental Review and Analysis
EF	electric field
EIS	Environmental Impact Statement
EJ	Environmental Justice
ELF-EMF	extremely low frequency electromagnetic fields
EMF	electromagnetic field
ER	electrical resistivity
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
G	Gauss
GH	growth hormone
GHG	Greenhouse Gas
GIS	geographic information system
GLO	General Land Office
GPS	global positioning system
HVTL	high voltage transmission line
IBA	Important Bird Area
IGF-1	insulin-like growth factor of one
IPaC	Information for Planning and Consultation
kV	kilovolt or 1,000 volts
kV/m	kilovolt per meter
mA	milliampere
MASW	Multichannel Analysis of Surface Waves
MBS	Minnesota Biological Survey
MCE	Minnesota Conservation Explorer
MDA	Minnesota Department of Agriculture

MDH	Minnesota Department of Health
DNR	Minnesota Department of Natural Resources
MGS	Minnesota Geological Survey
MnDOT	Minnesota Department of Transportation
MF	magnetic field
MISO	Midwest Independent System Operator
Minn. R.	Minnesota Rule
Minn. Stat.	Minnesota Statute
MP	mile post
MPCA	Minnesota Pollution Control Agency
MRPC	Mississippi River Parkway Commission
NAAQS	National Ambient Air Quality Standards
NAC	noise area classification
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NERC	North American Electric Reliability Corporation
NHIS	Natural Heritage Inventory System
NLEB	Northern Long Eared Bat
NOx	nitrous oxide
NPC	Native Plant Communities
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
O_3	ozone
OES	Office of Environmental Stewardship
Pb	lead
PCB	polychlorinated biphenyls
PEM	palustrine emergent
Peoples	Peoples Energy Cooperative
PM2.5	particulate matter less than 2.5 microns in diameter
PM10	particulate matter less than 10 microns in diameter
ppm	parts per million
Proposed Project	Wabasha 161 kV Transmission Line Relocation Project
RGU	Responsible Government Unit
RNC	Rare Natural Communities
ROI	Region of Influence
ROW	right-of-way
RPA	Route Permit Application
RPBB	Rusty Patch Bumble Bee
RPU	Rochester Public Utility
RSA	Route Segment Alternative
RUS	Rural Utilities Service
Scoping Decision	EA Scoping Decision
subd.	subdivision (Minnesota Statute)
subp.	subpart (Minnesota Rule)
SHPO	State Historic Preservation Office
SNA	State Natural Area
SO_2	sulfur dioxide
SOBS	Site of Biological Significance
SWCD	Soil and Water Conservation District
T	Tesla
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VMP	vegetation management plan
VOC	volatile organic compounds
WCA	Wetland Conservation Act
WHP	Wellhead Protection
WHPA	Wellhead Protection Areas
WMA	Wildlife Management Area
µG	milligauss
ALJ	administrative law judge
APR	Applicant's Proposed Route
BMPs	best management practices
Commission	Minnesota Public Utilities Commission
CSAH	County State Aid Highway
dBa	a-weighted sound level recorded in units of decibels
EA	Environmental Assessment
EERA	Energy Environmental Review and Analysis
ELF-EMF	extremely low frequency electromagnetic fields
EMF	electromagnetic field
HVTL	high voltage transmission line
KHz	kilohertz
kV	kilovolt or 1,000 volts
DNR	Minnesota Department of Natural Resources
MDOC	Minnesota Department of Commerce
MDOT	Minnesota Department of Transportation
MHz	megahertz
Minn. R.	Minnesota Rule
Minn. Stat.	Minnesota Statute
MOAH	Minnesota Office of Administrative Hearings
MOSA	Minnesota Office of the State Archaeologist
MPCA	Minnesota Pollution Control Agency
MSHPO	Minnesota State Historic Preservation Office
NAC	noise area classification
Nation Register	National Register of Historic Places
NESC	National Electrical Safety Code
NEV	neutral-to-earth voltage
NLCD	National Land Cover Database
NLEB	Northern Long Eared Bat
NPDES/SDS	National Pollutant Discharge Elimination System /State Disposal System Construction Stormwater permit
NWI	National Wetland Inventory
PAR	Proposed Alternative Routes
Proposed Project	Wabasha 161 kV Transmission Line Relocation Project
ROI	Region of Influence
ROW	right-of-way
RPA	Route Permit Application
RSA	Route Segment Alternative
Scoping Decision	EA Scoping Decision
subd.	subdivision (Minnesota Statute)
subp.	subpart (Minnesota Rule)
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Office
UHF	ultra-high frequency

USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
VHF	very high frequency
WCA	Wetland Conservation Act
WMA	Wildlife Management Area
µG	milligauss

1. INTRODUCTION

On March 27, 2024, Dairyland Power Cooperative (Applicant or Dairyland) submitted a high voltage transmission line (HVTL) Route Permit Application (RPA) to the Minnesota Public Utilities Commission (Commission).[1] The RPA was submitted under the alternative review process.[2] The Docket Number for this Project is ET3/TL23-388. A Certificate of Need is not required for the Project. See **Section 2.1**.

The Minnesota Department of Commerce (Department), Energy Environmental Review and Analysis (EERA) staff is tasked with conducting environmental review on applications for route permits before the Commission.[3] The intent of the environmental review process is to inform the public, decision-makers, local governments, state agencies, and applicants of the potential impacts and possible mitigation measures associated with the proposed Project.

This document is an Environmental Assessment (EA) addressing the issues required in Minnesota Rule (Minn. R.) 7850.3700, subpart 4, and those identified in the Commission's September 24, 2024, EA Scoping Decision document (**Appendix A**). The EA is organized as follows:

Section 1 provides an overview of this document and the Project, including a summary of the potential impacts and mitigation measures from the project.

Section 2 explains the regulatory framework associated with the Project, including the route permitting process and other permits and approvals required for the Project.

Section 3 describes the project as proposed by the Applicant, including rights-of-way, structures, and conductors.

Section 4 details the potential impacts of the Project to both human and natural resources, and identifies measures that could be implemented to avoid, minimize, or mitigate identified adverse impacts.

Section 5 describes any unavoidable impacts, and irreversible or irretrievable commitment of resources resulting from the proposed Project.

Section 6 discusses the Applicant's Proposed Route (APR) and Route Segment Alternatives (RSA) and their merits relative to the routing factors used by the Commission in making a route permit decision.

1.1. Project Purpose

In July 2020, the Midwest Independent System Operator (MISO) approved a long-range transmission portfolio including a new Wilmarth-North Rochester-Tremval transmission line. This new 345-kilovolt (kV) line would utilize the double circuit capability of the CapX2020 system

[1] The application was a joint certificate of need (CN) and route permit application. Legislation subsequently removed the need for a CN for the Project, and the Applicant withdrew the CN portion of its application. Accordingly, this EA addresses sole the route permit application.
[2] Minn. Stat. § 216E.04; Minn. R. 7850.2800-3900
[3] Minn. R. 7850.3700

between North Rochester, Minnesota and Alma, Wisconsin. Consequently, Dairyland's existing 161 kV transmission line must be removed from the existing CapX2020 structures and relocated to make room for the new 345 kV circuit on the CapX2020 structures.

The Applicant is proposing to relocate approximately 13.3 miles of 161 kV HVTL and construct a new substation in Wabasha County, Minnesota (the Wabasha Relocation Project, or the Project). The Project starts in Plainview Township, northeast of the Plainview and traverses northeast through Highland, Watopa, and Greenfield Townships before ending at the new 4.0 acre 161/69 kV substation (Kellogg Substation) located on a 10.8-acre site off of County Road 84, southeast of Kellogg and west of the Mississippi River. The Project is a reroute of approximately 10.4 miles of the existing Dairyland LQ34 161kV transmission line, which is presently located on the existing CapX2020 Hampton-Rochester-LaCrosse 345 kV structures. This portion of the Project is referred to as the Applicant's Proposed Route (APR). Ten Route Segment Alternatives (RSA) were identified during public scoping (**Figure 1**). The RSAs and APR are analyzed in this document.

1.2. Project Description

The Project would involve installation of 70- to 110-foot-high steel monopoles placed 400 to 800 feet apart within a 100-foot-wide right-of-way (ROW), and construction of a new 4.0-acre 161 /69 kV substation (Kellogg Substation) east of Kellogg, Minnesota.

The Applicant proposes to relocate the existing LQ34 161 kV transmission line that is currently located on the CapX2020 structures, which parallels and are up to 2.1 miles south of the Project. The Project includes the installation of a new 13.3-mile 161 kV transmission line and a new Kellogg Substation in Wabasha County, Minnesota. The Applicant must have its relocated line operational to ensure continued service to the Wabaco Substation prior to the stringing of the second cable for the Mankato to Mississippi River 345 kV Transmission Project circuit, which is planned to be in operation in June 2028. The APR follows an approximately 13.3-mile route starting in the vicinity of Structure X-Q3-75 on Dairyland's LQ34 161 kV transmission line northeast of the Plainview in Wabasha County to the new 4-acre Kellogg Substation.

Transmission lines generally include an alignment, ROW, and route (**Figure 2**). The term *alignment* is used to refer to the location of the transmission line and structures. All structures will be steel, self-supporting, so no guying will be required. Typical pole heights will range from 75 to 140 feet above ground and spans between poles will range from 300 to 1,000 feet. Construction will occur within a 100-foot-wide ROW easement that the Applicant will obtain to operate the transmission line. The 100-foot-wide ROW easement is centered on the Proposed Alignment (or 50 feet on either side of the transmission line). As defined by Minn. R. 7850.1000, subpart 15, ROW is the land interest required within a route for the construction, maintenance, and operation of a HVTL.

The route is a larger area that is inclusive of the alignment, ROW, and the Kellogg Substation. Minn. Stat. 216E.01, subdivision 8, defined route as the location of a high-voltage transmission line between two end points. The route may have a variable width of up to 1.25 miles. The Applicant requested a standard route width of 400 feet (200 feet on either side of the proposed alignment for most of the Project). The Applicant is requesting a wider route width in some

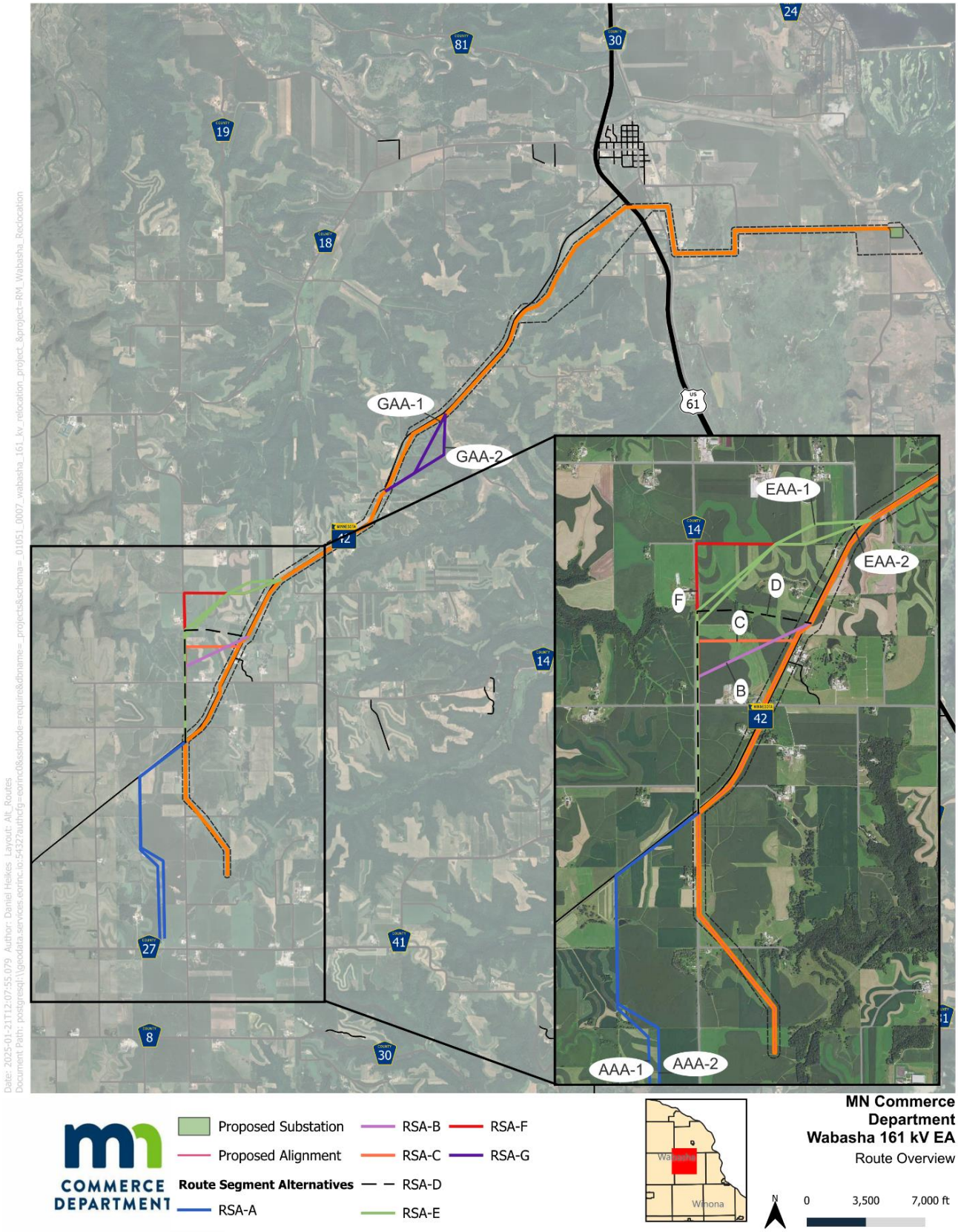

Figure 1. Route Overview.

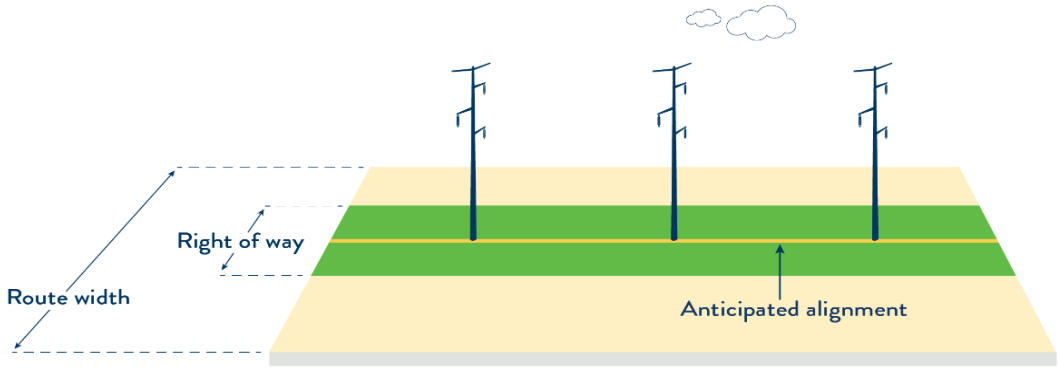

Figure 2. Project Concept.

areas (up to 2,300 feet wide) to allow for additional route study and the potential need to make minor modifications to the APR in these areas.

Appendix B contains a series of aerial maps depicting the APR, RSAs, 100-foot-wide ROW, requested route width, and Kellogg Substation footprint.

The Project includes portions of Plainview, Highland, Watopa, and Greenfield townships in Wabasha County, Minnesota and the City of Kellogg (**Table 1**).

Table 1. Project Area.

Township	Range(s)	Section(s)
108 North	11 West (Plainview Township)	1 and 2
109 North	10 West (Watopa Township) 11 West (Highland Township)	4, 5, 7, 8, and 18 13, 23-26, 34, and 35
110 North	10 West (Greenfield Township)	25-27, 30, 31, and 33-36

The APR is co-located with other roads, railroads, or utility ROWs for 9.5 miles (or 71 percent) of its length. Xcel Energy, and Peoples Energy Cooperative (Peoples) have existing overhead distribution lines in the Project route. The Applicant understands that Xcel Energy and Peoples plan to bury these lines where they are overtaken by the Project, rather than attach them to the new 161 kV structures installed by the Applicant. Xcel Energy and Peoples will undertake this effort, but the Applicant will be responsible for reimbursing Xcel Energy and Peoples for costs incurred to bury their distribution lines.

At the beginning of the APR (milepost (MP) 0.0), existing structure X-Q3-75 will be removed and replaced with a new starting structure (**Appendix B, Map 2**). Conductors that continue from this structure on to the CapX2020 structures (to the northeast) will be removed to make room for the planned 345 kV CapX2020 circuit. Conductors that continue to the southwest will be connected to the first new structure. There is a possibility, based on engineering design, that the

next structure beyond X-Q3-75 (to the southwest) will need to be replaced or modified to accommodate the changes in line configuration. There are some distribution circuits along various parts of the APR that will need to either be collocated with the new structures or relocated and/or buried underground.

The new 13.3-mile APR will enter the Kellogg Substation from the west at mile post (MP) 13.3 (**Appendix B, Map 10**). To the north of the Kellogg Substation, structure X-N340-312 currently exists under the CapX2020 lines. This structure, which is within the APR, will be replaced or converted to 161 kV and brought directly into the northern side of the Kellogg Substation. The Kellogg Substation will then supply the LN340 69 kV transmission line, which travels north-south between Kellogg and the Utica, Minnesota area (**Appendix B, Map 10**). The Applicant will modify approximately 1,500 feet of the existing 69 kV line to provide connection into the new Kellogg Substation. The 69 kV take-off structure in the Kellogg Substation may require additional ROW outside the existing ROW. Some 69 kV structures south of the Kellogg Substation will likely need to be replaced to accommodate the changes in line configuration. These structures will be wood poles, similar to what is presently installed.

1.3. Sources of Information

Much of the information used in this EA derives from documents prepared by the Applicant, including the RPA and associated studies to support the RPA. In addition to material provided by the Applicant, information from scoping comments, relevant environmental review documents for similar projects, spatial data, and other state agencies were used to prepare the EA and are cited in the document footnotes.

Spatial data was imported into geographic information system (GIS) software, where the data was analyzed, and potential impacts of the project quantified (where applicable).

2. REGULATORY OVERVIEW

To construct the proposed project, the Applicant must obtain a Route Permit from the Commission. Additional approvals from other state and federal agencies with permitting authority for actions related to the project may also be required.

2.1. Certificate of Need

The proposed Project will operate at a voltage greater than 100 kV and will have a length greater than 10 miles. Therefore, the Project qualifies as a large energy facility under Minnesota Statute (Minn. Stat.) § 216B.2421. Large energy facilities typically require a Certificate of Need (CN) from the Commission.[4] However, transmission lines that are relocated to a new right-of-way are exempt from a CN provided that the line is not capable of operating at a higher voltage.[5] This exemption is applicable to the Project; thus, the Project does not require a CN.

Accordingly, EERA staff is preparing this EA that will inform the Commission decisions solely on the applicant's route permit application.

2.2. Route Permit

Because the Project is a 161 kV transmission line that is greater than 1,500 feet in length, a Route Permit from the Commission is required.[6] The Project qualifies for review under the alternative permitting process because it is a high voltage transmission line of between 100 and 200 kilovolts.[7] The regulatory process described in this section is the process that is followed to satisfy all the requirements under the alternative review process route permit rules.[8]

Route permit applications for HVTLs must provide specific information about the proposed project including, but not limited to, applicant information, route description, and potential environmental impacts and mitigation measures (Minn. R. 7850.3100). Review under the alternative permitting process does not require the applicant to propose alternative routes in the permit application. However, if the applicant has evaluated and rejected alternative routes, they must include these in their route permit application along with the reasons for rejecting them.

In an Order dated May 7, 2024, the Commission accepted the HVTL Route Application as complete and authorized review under the alternative permitting process defined in Minn. Stat. § 216.04 and Minn. R. 7850.2800 to 7850.3900 and referred the matter to the Office of

[4] Minn. Stat. § 216B.243
[5] Minn. State. 216B.243, Subd. 8.
[6] Minn. Stat. § 216E.04 and Minn. R. 7850.2900 to 7850.3700 and 7850.4000 to 7850.4400
[7] Authorized by Minn. R. 7850.2800, subp. 1(c)
[8] Minn. R. Ch. 7850

Administrative Hearings for appointment of an Administrative Law Judge to prepare a full Report.[9]

2.2.1.1. Scoping

The EA scoping process has two primary purposes: 1) to gather public input on the impacts, mitigation measures, and alternatives to study in the EA, and 2) to focus the EA on those impacts, mitigation measures, and alternatives that will aid in the Commission's decision on the route permit.[10] EERA staff gathered input on the EA scope through two public meetings and an associated comment period.

The Commission and EERA staff held two public information scoping meetings to introduce the Project and EA process. One meeting was in person, and one meeting was virtual. The in-person meeting was held on June 12, 2024, at Saint Agnes Hall, in Kellogg, Minnesota. The virtual meeting was held on June 11, 2024. Approximately 25 members of the public attended the in-person meeting. No members of the public attended the virtual meeting.

Comments were received from three persons at these meetings, who expressed concern on a variety of potential impacts associated with the project, including impacts to land use and agricultural production (specifically, dairy operations) and potential impacts to human health. The court reporter records from the public meetings and scanned images (pdf) of the original written comments received were posted on the EERA webpage and filed in eDockets.[11]

A 30-day comment period, which closed on June 26, 2024, provided the public an opportunity to submit comments to EERA staff on potential impacts and mitigation measures for consideration during the EA scope development process. Comments were received from one state agency, one labor union, the Applicant, and from 22 citizens.[12] Several of these comments

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[9] Commission Order finding the application complete and referring the matter to the OAH, July 5, 2023. eDocket No. 20237-197231-01.

[10] https://www.edockets.state.mn.us/edockets/searchDocuments.do?method=showPoup&documentId=%7bD06F538F-0000-CF38-9394-871DB1B16E59%7d&documentTitle=20245-206459-02

[11] Public Comments, Written and Oral submitted during the scoping comment period.

[12] June 16, 2024, scoping comment letter from the Minnesota Department of Transportation (MnDOT). [eDocket No. 20246- 207970-01]. June 26, 2024, scoping comment letter from Operating Engineers Local 49 and North Central States Regional Council of Carpenters. [eDocket No. 20246-207972-01]. June 26, 2024, Dairyland Power Cooperative scoping comment letter. [eDocket No. 20246-207981-01]. Comments on the EA from the Public included: Mr. Eric and Ms. Nicole Bartsch [eDockets Nos. 20247-208288-02 and 20247-208289-01]; Mr. Jason Klassen [eDocket No. 20247-208291-01]; Mr. Leo and Ms. Jane Kottschade [eDocket No. 20247-208292-01]; Mr. Gary Lehnertz [eDocket No. 20247-208293-02]; Mr. Bart McDonough [eDocket No. 20247-208306-01]; Mr. Tom Miller [eDocket No. 20247-208307-01]; Ms. Elizabeth and Mr. Ron Sanders [eDocket No. 20247-208308-02]; Ms. Cindy Stamschror [eDocket No. 20247-208309-01] and Mr. Jack Stamschror [eDocket No. 20247-208310-02]; Mr. Darrin Young [eDocket No. 20247-208311-02], Mr. Gary Young [eDocket No. 20247-208312-02], Mr. Maurice Young [eDocket No. 20247-208314-01] and, Ms. Rita Young [eDocket No. 20247-208313-01]; Mr. Gene Zarling [eDocket No. 20247-208316-02], Mr. James Zarling [eDocket No. 20247-208317-02], Mr. Joseph Zarling [eDocket No. 20247- 208318-01], and, Mr. Kent Zarling [eDocket No. 20247-208319-01]. A group comment was submitted in-person on June 25, 2024, by Mr. Maurice Young, Messrs. Kent, James, Joseph, and Gene Zarling, Ms. Jane and Mr. Leo Kottschade, and Mr. Eric Bartsch [eDocket No. 20247-208290-01] herein referred to as "Community Comment." 2 June 16, 2024, scoping comment letter from the Minnesota Department of Transportation (MnDOT). [eDocket No. 20246- 207970-01].

proposed specific alternative routes for consideration in the EA. Comments received ranged from: 1) statements of support for or opposition to the proposed Project; 2) statements of specific concerns or perceived impacts, and 3) suggested alternative routing for portions of the Project.

The Minnesota Department of Transportation (MnDOT) provided feedback on the application, highlighting potential impacts on various state and US highways.[13] MnDOT emphasized the need for coordination regarding highway construction activities and oversize load transportation, suggesting regular communication with MnDOT's District 6 Office. Additionally, MnDOT's Office of Environmental Stewardship (OES) reviewed the application and outlined potential environmental concerns applicable permits and guidance, as well as permit requirements.

In its RPA, the Applicant reviewed route alternatives for their 161 kV transmission line, relying in part on route alternatives evaluated as part of the CAPX2020 project for comparison to their APR.[14] Through its scoping comment letter, the Applicant provided an additional route segment alternative for inclusion in the EA (RSA-C).[15]

During the EA scoping comment period, members of the public suggested route segment alternatives (RSA), which include modifications to the alignment proposed by the Applicant in their RPA. The EA will evaluate the route proposed in the Applicant's RPA and as modified by the Applicant's comments. **Appendix B** provides aerial maps depicting the location and current environment of the APR and RSA identified during scoping and carried forward for analysis in this EA. Additionally, the EA will evaluate the APR and the seven RSAs (described below) included in the scoping decision (**Appendix A**):

- **Applicants Proposed Route** – The APR will begin in the vicinity of Structure X-Q3-75 on the Applicant's existing LQ34 161 kV transmission line, located approximately 0.6 miles northeast of the intersection of Township Road 232 and 215th Avenue in Plainview Township in Wabasha County (**Appendix B, Maps 2-10**). The APR will extend northwest for approximately 1.0 mile until 215th Avenue, and then will continue north for approximately 0.6 mile to State Highway 42 near Milepost (MP) 1.6. From there, it will turn northeast and continue to follow State Highway 42 for approximately 6.4 miles until diverging south near MP 8.0. It will travel across open ground for 1.7 miles until the crossing of U.S. Highway 61/Great River Road near MP 9.7. The APR will cross Great River Road and the Canadian Pacific Railroad, turning south on the east side of the railroad at MP 10.1. It will parallel the railroad for approximately 0.5 mile before turning east, then north, then east again, to follow the south side of County Road 84. The APR then follows County Road 84 for approximately 1.7 miles to its connection point at the Kellogg Substation.

[13] June 16, 2024, scoping comment letter from the Minnesota Department of Transportation (MnDOT). [eDocket No. 20246- 207970-01].
[14] March 27, 2024, Dairyland Power Cooperative RPA. [eDocket No. 20243-204688-06].
[15] June 26, 2024, Dairyland Power Cooperative scoping comment letter. [eDocket No. 20246-207981-01]

The APR will not be constructed within existing utility ROW but will be co-located with existing utility, road, and railroad ROW for approximately 9.5 miles – or 71 percent of the APR. Specifically, the APR is:

- Co-located with existing utility lines for 5.6 miles (Peoples' distribution lines for approximately 3.8 miles; Xcel Energy distribution lines for 1.3 miles; and Dairyland transmission lines for 0.5 mile). Some of these areas are also alongside state and local road ROWs.[16]
- Co-located with township roads, county roads, and state highways for 8.4 miles. Some of these areas are adjacent to and parallel with existing utility ROWs.
    - Co-located with the Canadian Pacific Railroad for 0.6 mile.

In addition to the APR, the EA analyzes and includes seven route segment alternatives (referred to a RSA-A through RSA-G) identified during the during the initial public scoping in the summer of 2024 and accepted by the Commission on September 17, 2024. Three of the route segment alternatives (RSA-AAA-1 and RSA-AAA-2; RSA-EAA-1 and RSA-EAAA-2; and RSA-GAA-1 and RSA-GAA-2) are further refined into sub-route segment alternatives. Route segment alternatives would add anywhere from 0.0 to 2.6 miles to the permitted route. One route segment alternative (RSA-C) was presented by the Applicant for engineering reasons RSA-A, RSA-B, and RSA-D through RSA-G were offered by the public during scoping because of concerns of electrical interference with highly automated dairy operations and other concerns.

- **Route Segment Alternative A** – Several community members proposed RSA–A, with two alignment variations (RSA-AAA-1 and RSA-AAA-2). RSA-A involves adjusting the APR departure from the existing 161 kV line approximately 1.0 mile south from its current location in Plainview Township (**Appendix B, Map 2**). From this new starting point, the route extends north for about 0.75 miles, crossing the CAPX2020 high voltage line, then continues northwest for a 0.25 mile before following property lines for approximately 0.9 miles, ultimately connecting with State Highway 42 in Highland Township.
- **Route Segment Alternative B** – A member of the public provided RSA–B, which departs from State Highway 42, for approximately 0.7 miles, crossing north on County Road 14 (Section 26, Highland Township), for approximately 0.25 miles, then turning east in Section 23, where it rejoins the APR in the SW¼ of Section 24 of Highland Township (**Appendix B, Map 3**).
- **Route Segment Alternative C** – The Applicant provided RSA–C, which is approximately 1.7 miles in length. It departs from the APR near State Highway 42 at the NW¼ of Section 26 of Highland Township, where it follows County Road 14 north for approximately 1.0 mile, then turns east at the NW¼ of Section 23 for

[16] Where the APR is co-located with existing distribution lines, Dairyland currently understands that Xcel Energy and Peoples plan to bury these lines where the Project overtakes them, resulting in the removal of those poles.

approximately 0.6 miles, then rejoining the APR along State Highway 42 in the NW¼ SW¼ of Section 24 of Highland Township (**Appendix B, Map 4**).

- **Route Segment Alternative D** – A member of the public provided RSA–D, which departs from State Highway 42 for approximately 0.7 miles (Section 26 in Highland Township), then crossing north on County Road 14 into Section 23 of Highland Township for approximately 0.7 miles, then east, rejoining the APR along State Highway 42 in the SW¼ of Section 24 of Highland Township (**Appendix B, Map 5**).

- **Route Segment Alternative E** – Members of the public provided RSA–E, which begins from the APR along State Highway 42 at the NW¼ SE¼ of Section 26 of Highland Township, then north for approximately 0.7 miles, crossing County Highway 14, where it turns to the northeast from the center of Section 23 of Highland Township, extending to the southern edge of the SW¼ of Section 13 of Highland Township, until it rejoins the APR at State Highway 42 (**Appendix B, Map 6**). RSA – E features two alignment alternatives, designated EAA-1 and EAA-2.
- **Route Segment Alternative F** – The proposed RSA–F was submitted by a member of the public. This alternative begins at the NW¼ SE¼ of Section 26 of Highland Township, extending north on County Highway 14 for approximately 1.7 miles. It then extends due east for approximately 0.7 miles along the northern Section boundary of the NW¼ of Section 23, to the SW ¼of Section 13, then extending to the northeast for approximately 0.7 miles until it rejoins the APR at State Highway 42 (**Appendix B, Map 7**).
- **Route Segment Alternative G** –RSA–G, which was submitted by a member of the public, features two alignment alternatives – RSA-GAA-1 and RSA-GAA-2. RSA-GAA-1 and RSA-GAA-2 depart and rejoin the APR at common points along the south-side of Highway 42 in Section 8 of Watopa Township (**Appendix B, Map 8**). They are distinguished through the way they rejoin the APR. Both would enter in a similar spot, but RSA-GAA-2 has more of an angle in its approach than RSA-GAA-1.

EERA issued the Scoping Decision on September 24, 2024 (see **Appendix A**).[17] The Scoping Decision identifies the issues and routes or route segments that are evaluated in this EA.

2.2.1.2. Environmental Review

Applications for HVTL route permits are subject to environmental review conducted by EERA staff.[18] Projects proceeding under the alternative permitting process require the preparation of an EA. An EA is a document which describes the potential human and environmental impacts of a proposed project and potential mitigative measures. The EA is the only state environmental review document required for the Project.[19]

[17] Minnesota Department of Commerce, *Environmental Assessment Scoping Decision*, Retrieved October 25, 2024, from eDockets No. 20249-210466-01.
[18] Minn. R. 7850.3700
[19] Minn. Stat. § 216E.04, subd. 5

An EA must include the following:

A. A general description of the proposed project.

B. A list of any alternative sites or routes that are addressed.

C. A discussion of the potential impacts of the proposed project and each alternative site or route on the human and natural environment.

D. A discussion of mitigative measures that could reasonably be implemented to eliminate or minimize any adverse impacts identified for the proposed project and each alternative.

E. An analysis of the feasibility of each alternative site or route considered.

F. A list of permits required for the project; and

G. A discussion of other matters identified in the scoping process.[20]

2.3. Public Hearing

The Commission is required to hold a public hearing once the EA is complete. [21]The hearing will be presided over by an administrative law judge (ALJ) from the Office of Administrative Hearings. Interested persons will have the opportunity to speak at the hearing, present evidence, ask questions, and submit comments. The ALJ will provide a report to the Commission. Comments received during the public hearing become part of the record in the proceeding. EERA staff will respond to questions and comments about the EA at the public hearing, but staff is not required to revise or supplement the document.[22]

2.4. Permit Decision

The Minnesota Legislature has directed the Commission to select HVTL routes that minimize adverse human and environmental impacts while insuring continuing electric power system reliability and integrity.[23] An HVTL route must be compatible with environmental preservation and the efficient use of resources while also ensuring electric energy needs are met and fulfilled in an orderly and timely fashion.[24]

Route permits issued by the Commission include a permitted route and anticipated alignment. The route permit also outlines conditions specifying construction and operational standards.

Minn. Stat. § 216E.03, subdivision 7(b) identifies twelve considerations that the Commission must consider when designating a route for a HVTL. These considerations are further clarified and expanded by Minn. R. 7850.4100, which identifies fourteen factors the Commission must consider when making a permit decision. These factors include:

[20] Minn. R. 7850.3700, subp. 4

[21] Minn. R. 7850.3800, subpart 1

[22] Minn. R. 7850.3800, subp. 4.

[23] Minn. Stat. § 216E.02, subd. 1.

[24] Minn. Stat. § 216E.02, subd. 1.

A. Effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services.

B. Effects on public health and safety.

C. Effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining.

D. Effects on archaeological and historic resources.

E. Effects on the natural environment, including effects on air and water quality resources and flora and fauna.

F. Effects on rare and unique natural resources.

G. Application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.

H. Use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.

I. Use of existing large electric power generating plant sites.

J. Use of existing transportation, pipeline, and electrical transmission systems or rights-of-way.

K. Electrical system reliability.

L. Costs of constructing, operating, and maintaining the facility are dependent on design and route.

M. Adverse human and natural environmental effects which cannot be avoided; and

N. Irreversible and irretrievable commitments of resources.

At the time the Commission makes a final route permit decision, it must determine whether the EA and the record created at the public hearing address the issues identified in the scoping decision.[25] The Commission must also 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.[26]

The Commission must make a final decision on the route permit within 60 days after receiving receipt of the ALJ report.[27] 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.[28]

[25] Minn. R. 7850.3900, subp. 2.
[26] Minn. Stat. § 216E.03, subd. 7(e)
[27] Minn. R. 7850.3900, subp. 1
[28] Minn. R. 7850.3900, subp. 1

A decision by the Commission on a RPA for the proposed project is anticipated in the summer of 2025.

If issued a route permit by the Commission, the Applicant may exercise the power of eminent domain to acquire land for the project. Minn. Stat. § 216E.12 describes the utility's and landowners' rights under the powers of eminent domain.[29]

2.5. Other Permits and Approvals

In addition to the Route Permit sought by the Applicant, several other permits, license, approvals, or consultations may be required to construct the Project depending on the actual route selected and the conditions encountered during construction. A list of the local, state, and federal permits that may be required for this Project is provided in **Table 2.** Any required permits will be obtained by the Applicant in a timely manner.

Table 2. Summary of Permits and Approvals.

Permit	Jurisdiction
Federal	
Section 404 Clean Water Act Permit	U.S. Army Corps of Engineers
Lease for Utility System Facilities on Federal Lands and Property	U.S. Army Corps of Engineers
Section 7 Endangered Species Act / Migratory Bird Treaty Act Consultation/ Bald and Golden Eagle Protection Act	U.S. Fish and Wildlife Service
Part 7460 Airport Obstruction Evaluation	Federal Aviation Administration
State	
National Historic Preservation Act Consultation Minnesota Statutes Chapter 138 (Minnesota Field Archaeology Act and Minnesota Historic Sites Act)	State Historic Preservation Office Tribal Historic Preservation Offices
License to Cross Public Waters	Minnesota Department of Natural Resources – Lands and Minerals

[29] EERA has developed a Fact Sheet (Easements Fact Sheet) to explain how electric utilities obtain ROW for new energy facilities and to inform landowners of their rights in negotiating easement agreements. http://mn.gov/commerce/energyfacilities/documents/Easements%20Fact%20Sheet_08.05.14.pdf.

Permit	Jurisdiction
Water Appropriation General Permit – Construction Dewatering	Minnesota Department of Natural Resources
State Endangered Species Consultation	Minnesota Department of Natural Resources – Ecological Services
Calcareous Fen No Effect Concurrence	Minnesota Department of Natural Resources
National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit Coverage	Minnesota Pollution Control Agency
Section 401 Clean Water Act Water Quality Certification	Minnesota Pollution Control Agency
Wetland Conservation Act	Minnesota Board of Water and Soil Resources Wabasha County Soil and Water Conservation District
Utility Accommodation on Trunk Highway ROW	Minnesota Department of Transportation
Miscellaneous Work Permit for Trunk Highways	Minnesota Department of Transportation
Oversize and/or Overweight Permit	Minnesota Department of Transportation
Local	
Road Crossing/Driveway/ROW/Utility Permits	Plainview, Highland, Watopa and Greenfield Townships, Wabasha County
Over-Width Load Permits	Plainview, Highland, Watopa and Greenfield townships and Wabasha County
Other	
Crossing Permits/Agreements	Other utilities such as railroads

2.6. Applicable Codes

All transmission lines, regardless of route location, must meet requirements of the National Electrical Safety Code (NESC) for High Voltage Transmission Lines.[30] NESC standards are designed to safeguard human health "from hazards arising from the installation, operation, or maintenance of … overhead and underground electric supply and communication lines."[31] 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.

HVTL route permits require permittees to comply with North American Electric Reliability Corporation (NERC) standards. NERC standards define the reliability requirements for planning and operating the electrical transmission grid in North America.[32]

2.7. Issues Outside the Scope of the EA

Consistent with the scoping decision for this EA (**Appendix A**), this document does not address the following topics:

- Any route, route segment, or alignment alternative not specifically identified for study in the scoping decision.
- The manner in which landowners are compensated for ROW easements.

[30] *See* Minn. Stat. § 326B.35; Minn. R. 7826.0300, subp. 1 (requiring utilities to comply with the most recent edition of the NESC when constructing new facilities or reinvesting capital in existing facilities); *see also* Appendix B Generic Route Permit Template, Section 4.4.1 (requiring compliance with NESC standards).
[31] IEEE Standards Association (n.d.) C2-2002 – National Electrical Safety Code 2002 Edition, http://standards.ieee.org/findstds/standard/C2-2002.html.
[32] North American Electric Reliability Corporation (n.d.) *Standards*: Retrieved November 22, 2024, from http://www.nerc.com/pa/stand/Pages/default.aspx.

3. PROPOSED PROJECT

The following section details the construction, operation, and maintenance activities that will be used during the Project.

3.1. Route Width

A "route" or "route width," referred to herein as the Proposed Route, is the area defined by the Commission in a route permit in which the Project can be constructed. The Proposed Route is wider than the ROW to provide flexibility in the alignment and ROW placement to address human and environmental concerns that may arise after the Route Permit has been issued.

In its RPA, the Applicant requested a 400-foot-wide Proposed Route. However, the Applicant also requested a variable route width (up to 2,300 feet wide) for specific portions of the route to consider existing infrastructure, mitigate potential engineering challenges, and/or to facilitate any necessary realignments to accommodate agency and/or landowner requests. These areas include:

- Variable width in some areas along State Highway 42 after the intersection with 215th Avenue (near MP 1.6) to just north of 615th Street (near MP 7.8) to account for flexibility in routing around homes, buildings, and features along the highway.
- Up to 2,300-foot-wide route north of 615th Street (near MP 7.8) to just east of the U.S. Highway 61/Great River Road crossing (near MP 9.9) to account for flexibility in routing around steep slopes to the south of State Highway 42 and the U.S. Highway 61/Great River Road crossing.
- A variable, but up to 1,850-foot-wide route near the Kellogg Substation between MPs 12.9 to 13.3 to allow for flexibility in the ultimate placement of the substation.

Route widths are depicted on the maps found in **Appendix B**.

3.2. Right-of-Way and Additional Workspace

The ROW is the physical land area along the Project alignment that is needed to construct and operate the energy facility; this is the area that will be maintained by the Applicant. The Applicant will require easements that allow for a ROW width of 100 feet (typically 50 feet of each side of the alignment).

Additional temporary workspace (ATWS) beyond the 100-foot-wide ROW may be required at certain locations (road or railroad intersections, utility crossings, along steep slopes, and at stringing locations). In addition, there will be temporary staging of materials such as structures and hardware along the ROW prior to construction installation. The Applicant will avoid ATWS placement in wetlands and near waterbodies to the extent practicable. The Applicant should avoid disturbing sensitive and rare features as well when placing ATWS areas.

New easements will be needed for the 161 kV transmission line. At a minimum, the Project will require a total ROW width of 100 feet (typically 50 feet off each side of the transmission centerline) for the 161 kV transmission line system.

3.3. Substation

Substations are a part of the electric generation, transmission, and distribution system and contain high-voltage electric equipment to monitor, regulate, and distribute electricity. The Kellogg Substation is needed to connect the 161 kV transmission lines and the existing LN340 69 kV transmission line (**Appendix B, Map 12**). The Applicant is proposing to develop 4.0 acres of a 10.8-acre property, which will include the fenced area, stormwater pond, parking, access road, and transmission line ROWs that will enter/exit the substation.[33]

3.4. System Modifications

A number of modifications will need to be made to the existing system to accommodate the Project:

- At the beginning of the Project (MP 0.0), existing Dairyland structure X-Q3-75 will be removed and replaced with a new starting structure for the Project. Conductors that continue from this structure on to the CapX2020 structures (to the northeast) will be removed to make room for the planned 345 kV CapX2020 circuit. Conductors that continue to the southwest will be connected to the first new structure. There is a possibility, based on engineering design, that the next structure beyond structure X-Q3-75 (to the southwest) will need to be replaced or modified to accommodate the changes in line configuration (**Appendix B, Map 2**). Distribution circuits along various parts of the APR will be buried underground.
- The new 13.3-mile 161 kV transmission line will enter the Kellogg Substation from the west at MP 13.3 (**Appendix B, Maps 2-12**). To the north of the Kellogg Substation, structure X-N340-312 currently exists under the CapX2020 lines. This structure will be replaced or converted to 161 kV and brought directly into the northern side of the Kellogg Substation.
- The new Kellogg Substation will then supply the LN340 69 kV transmission line, which travels north-south between Kellogg and the Utica area (**Appendix B, Map 12**). The Applicant will modify approximately 1,500 feet of the existing 69 kV line to provide connection into the new Kellogg Substation. The 69 kV take-off structure in the Kellogg Substation will require some additional ROW as compared to the present ROW. Some 69 kV structures to the south of the Kellogg Substation will likely need to be replaced to accommodate the changes in line configuration. These structures will be wood poles, similar to what is presently installed.

[33] The substation footprint is an estimation at this time; the size, shape and precise location could potentially change per engineering design standards and landowner feedback.

3.5. Transmission Structures

The majority of the new 161 kV transmission line will consist of single circuit steel structures spaced approximately 300 to 1,000 feet apart. Transmission structures will typically range in height from 75- to- 140-feet above ground, depending upon the terrain and environmental constraints. The average diameter of the steel structures at ground level is 37 inches. Poles will be oriented in a delta configuration (one overhead ground wire at the top, two phases on one side and a single phase on the other) supported by suspension insulators at tangent structures and strain insulators at tension structures. All tangent poles with a line angle of 2 degrees or less will be directly embedded in the soil. Any structure with a line angle of greater than 2 degrees will be supported on a drilled shaft concrete foundation. Special horizontally configured structures (H-frame or 3 pole structures) may be required to cross under any higher voltage circuits in the corridor.

Multi-pole (or 3-pole and/or H-frame structures) are designed in a horizontal configuration, which maintains the transmission line conductors parallel to the ground. Horizontal configuration is sometimes desirable where the proposed transmission line crosses under other existing high voltage transmission lines. The horizontal configuration allows the 161 kV transmission line to be as low as possible at the crossing point, while still maintaining the required clearances set by the National Electrical Safety Code (NESC). Specific structure sizing will be determined after a Route Permit is issued and detailed engineering design is initiated. The Applicant anticipates use of H-frame or 3-pole structures only near the new Kellogg Substation location to cross under the 345 kV CapX2020 circuit. **Table 3** provides details of proposed structures. Potential structure designs and photographs are illustrated in **Figure 3**.[34]

Construction will not begin until all necessary approvals are obtained, and land rights have been secured. The construction timeline is dependent upon several factors including final surveys and project design, receipt of approvals and reviews, weather, and the availability of labor and materials. Equipment used in the construction process includes backhoes, cranes, boom trucks and assorted small vehicles.

Table 3.Typical 161 kV Structure Dimensions.

Structure Type	Material	Approximate Height (feet)	Base Diameter (inches)	Span-Between Distance (feet)
Monopole with davit arms and suspension insulators	Steel	80-140	31-51	300-1,000
Monopole with strain attachments directly to pole	Steel	75-110	35-55	300-1,000

[34] Illustrations are from Dairyland's RPA.

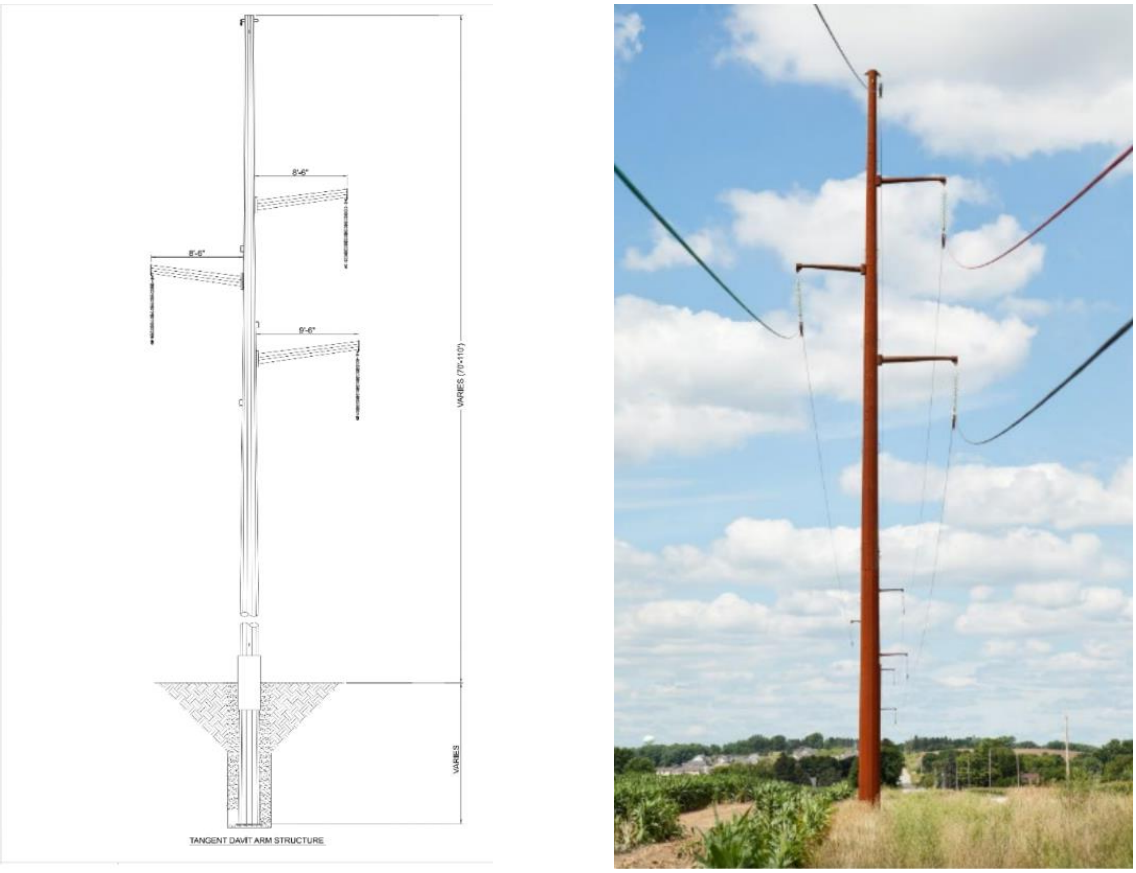

Figure 3. Typical 161 kV Transmission Structure

3.6. Construction

Construction of a transmission line typically occurs in the following sequence:

1. Collection of geotechnical data (soil borings) required for final design of the transmission Line;
2. Surveying and staking will be used conducted during multiple phases of the Project;
3. Installation of erosion and sediment control best management practices (BMPs) prior to anticipated ground disturbance activities;
4. Mobilization and preparation of staging / laydown yards;
5. Road improvements or development to provide access to the ROW;
6. Clearing activities of the ROW;
7. Installation of construction mats in wetlands or other unstable soil areas, and installation of temporary bridges across waterways prior to construction along the ROW;
8. Temporary material staging along the ROW prior to construction installation;

9. Grading, excavation, and foundation installation;
10. Structure setting;
11. Wire stringing and clipping once enough are structures set consecutively in a row to support a wire pull;
12. Removal of existing transmission circuits;
13. Cleanup and restoration of ROW; and
14. Demobilization and laydown yard cleanup.[35]

Construction of an overhead transmission line requires several different activities at any given location. The following subsections generally describe the major construction activities and approximate sequence (**Figure 4**).[36]

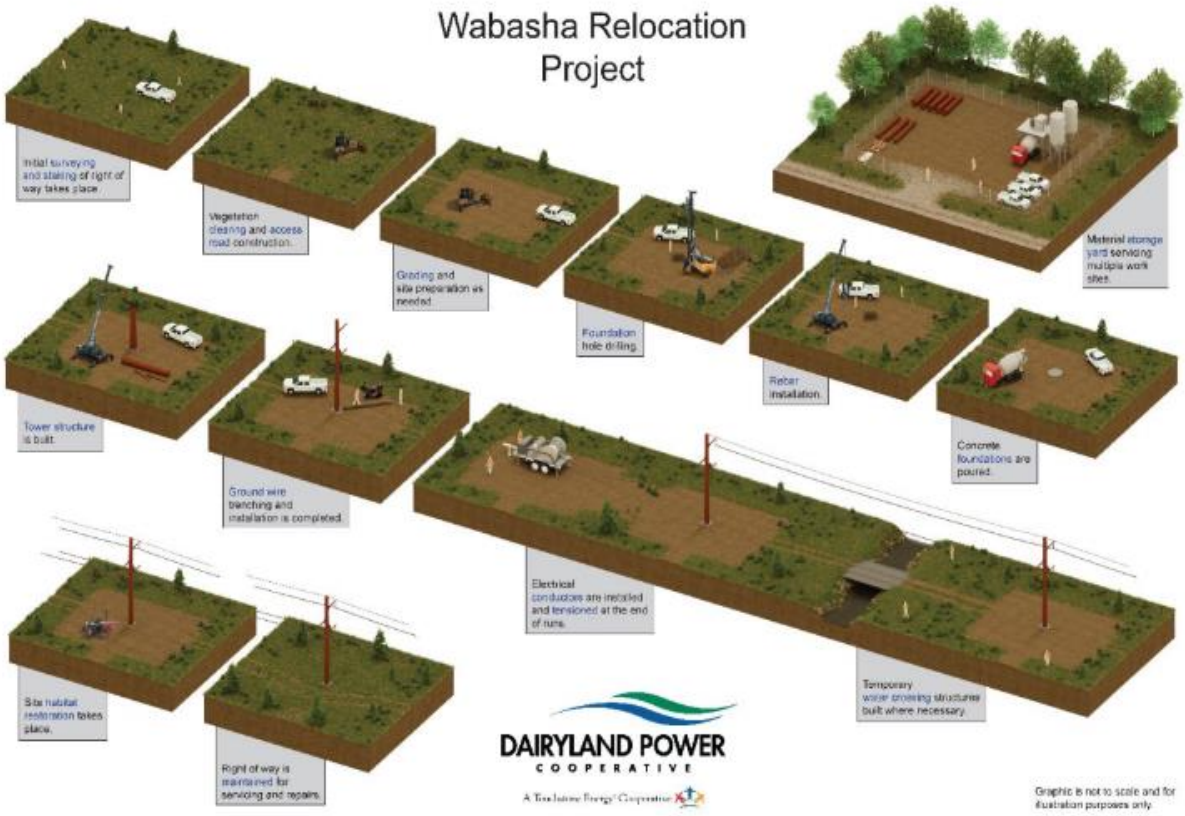

Figure 4. Construction Sequence.

After land rights have been secured and prior to commencing any construction activities, landowners will be notified of the Project schedule and other related construction activities.

[35] Adapted from Dairyland's RPA

[36] Adapted from Dairyland's RPA.

During construction of an overhead transmission line, several different work functions happen at the same time at any given location. The following information generally describes the major construction activities, their approximate sequence, typical construction machinery used, and the anticipated impacts associated with each activity:

- **Surveying** – Surveying and staking will be conducted during multiple phases of the Project and will include locating and marking the ROW and authorized off-ROW access roads, sensitive environmental resource boundaries, foundations or structure locations, property or section lines, underground and aboveground utilities. Surveying and staking will be performed prior to and sometimes after construction activities such as during constructability reviews, soil borings (geotechnical investigations), staging/laydown yards, clearing, installation of foundations, and hole excavations. These activities have limited impact on the environment or landowners and are generally completed by a two-person crew travelling by foot, all-terrain vehicle (ATV), or pick-up truck.
- **Erosion Control –** Installation of erosion and sediment control BMPs will be implemented prior to anticipated ground disturbance and in accordance with the Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit. Erosion and sediment control equipment includes ATVs and trucks for crew transportation, as well as skid loaders, tractors, backhoes, hydro-seeders, and other light-duty equipment. BMPs will be inspected, maintained, repaired, and replaced in accordance with the MPCA Construction Stormwater General Permit.
- **Mobilization** – Labor and equipment will be mobilized to prepare laydown yards for temporary trailer(s) and security measures to receive materials, storage containers, portable toilets, dumpsters, construction mats, tools, and equipment. Activities involved to prepare the staging/laydown yards include installation of erosion and sediment control BMPs, any leveling of uneven surfaces, stripping and stockpiling of topsoil (if necessary), and installation of gravel, tracking pads near entry/exit, if needed, installation of culvert(s), power, and fencing. This work is generally completed using equipment such as a bulldozer and dump trucks. The disturbance from the laydown yard is dependent on soil type and topography. Depending on landowner preferences, laydown yards may be left in place or returned to prior conditions following construction activities.
- **Access** – To access the ROW, improvement to existing access roads or development of new access roads may be required for safety and maneuverability. Road improvements may include tree trimming, tree clearing, road grading, widening and fill placement. Only construction mats will be used in wetland features; construction mats will be removed after completion of construction activities. This work is generally completed using equipment such as a bulldozer, track-hoe, skid-loader, and dump trucks. The travel surface of the access road is generally 20- to 25-feet wide. The total amount of disturbance of the road (cut slope to base of the spoils slope) is dependent on soil type and topography. Depending on landowner preferences and permit requirements,

access roads may be left in place or returned to prior conditions following construction.

- **Clearing** – To facilitate construction equipment access and ensure safe clearances between vegetation and the transmission line, all vegetation will be cleared for the full width of the ROW. Vegetation will be cut at or slightly above the ground surface using mechanized mowers, sky trims, processors, harvesters, or by hand. Rootstocks will generally be left in place, except in areas where stump removal is necessary to facilitate the movement of construction vehicles, or when reasonably requested by the landowner. Side trimming the ROW would happen shortly after the clearing is completed. Following the side trimming, a final mowing of debris and stump cleanup will be completed. Where permission of the landowner has been obtained, stumps of tall-growing species will be treated with an herbicide to discourage re-growth.
- **Crossings** – Matting will be used as a protective measure that minimizes ground impacts and will be installed to provide access through wetlands or other unstable soil areas prior to construction. Mats are also used to support and stabilize large equipment required for construction. Construction mat travel lanes will generally be 16 to 20 feet wide. Construction matting may consist of composite timber, or laminate mats and will be installed with rubber-tired grapple trucks, forwarders, forklifts, or skid loaders. The line will be constructed in segments with mats being moved and used in other segments as construction progresses.

  In addition, permitted temporary bridges will be installed over waterways. Equipment bridges will be designed to meet the requirements of the applicable agencies and local authorities. Bridges will be installed during clearing and will be removed as soon as possible during final restoration once the bridge is no longer required to complete and monitor restoration activities. Fording of waterbodies is prohibited (i.e., civil survey, potholing, or other equipment are not permitted to ford waterbodies prior to bridge placement).
- **Additional Temporary Workspace** – ATWS beyond the 100-foot-wide ROW may be required at certain locations, such as road or railroad intersections, utility crossings and along steep slopes. In addition, there will be temporary staging of materials such as structures and hardware along the ROW prior to construction installation. This work involves such equipment as semi-trucks, loaders, and cranes to unload structures and other materials near each work location. The Applicant will avoid the placement of ATWS in wetlands and near waterbodies as practicable.
- **Structure Installation** – Before foundation installation, construction mat platforms, generally 40 feet by 40 feet, may be installed around the structure location to ensure a level and safe working area. In some cases, an area approximately 40 feet by 40 feet around the structure location could be graded.

  Excavation is required for all structures whether they are directly embedded or use reinforced concrete foundations. In general, the excavated holes for each type of foundation will range from 5 to 10 feet in diameter and 20 to 50 feet in depth, or greater, depending on soil conditions. The method of installation, diameter and depth

of the foundation will vary depending on the soil capability and structure loadings. For direct-embedded poles, a hole will be excavated to the appropriate depth. The base of the structure will be placed into the excavated hole or, if soils are unstable, into a culvert, the area around the pole will be backfilled with clean granular fill or concrete. For structures requiring a reinforced concrete foundation, the required hole will be excavated, and a rebar cage and anchor bolts will be placed into the excavation. The excavation will then be filled with concrete to a point where the rebar cage and anchor bolts are covered, leaving a typical 1 to 2-foot reveal of the foundation above grade with exposed threaded anchor bolts. The complete caisson will then be allowed to cure. Typical equipment for this phase of construction would include dump trucks, drill rigs, cranes, vacuum trucks, concrete mixers, and tanker trucks.

In areas with high water tables or where water is needed to stabilize the hole during drilling, it may be necessary to dewater the excavation. Depending on site conditions, the water may be filtered through a geotextile filter bag or similar method and discharged to an upland area where it can re-infiltrate or be removed from the site using a tank truck. Appropriation and discharging activities will follow applicable regulations and permit requirements to ensure compliance with Minnesota water quality standards.

- **Structure Setting** – For base plate structures (mounted on concrete foundation), the above-grade structure would be placed on the anchor bolt pattern, leveled, and tightened down. For direct-embedded structures, the base section would be installed, leveled, and backfilled with granular or flow-able fill. After that, the top section or sections will be installed. At each section, hydraulic jacking systems are typically used to slide the joints together to the engineered and fabricated tolerances. Equipment used for this phase of construction would include cranes and bucket trucks at each structure location.
- **Stringing** – Once there are a sufficient number of structures set consecutively in a row to support a wire pull, the equipment for the wire pull is mobilized to the pull area and is set up. The conductor and static wires are then pulled and clipped into place. This stringing and clipping activity requires access to each structure with a bucket truck, crane, or helicopter. Other handling equipment used for this phase of construction includes reel trailers, wirepullers, and related stringing equipment.

  Wire stringing areas or wire pulling areas are approximately 40 feet by 300 feet. At a minimum, at each wire pulling area, matting will be placed under wire equipment for construction grounding purposes. Incidental matting will also be required at most road crossings. Matting will be removed by similar equipment used for installation as each wire pull or construction segment is completed. During mat placement, use, and removal, standard procedures will be implemented to prevent or minimize the spread of invasive species.
- **Removal of Existing Poles and Wire** – Where replacing or overbuilding existing transmission circuits, the existing structures and wire will be removed. The removed materials will be evaluated to determine their appropriate disposal. Typical equipment

used includes cranes, bucket trucks, reel trailers, wirepullers, and related stringing equipment. Where existing transmission structures are to be removed, the structure is usually removed to a depth of at least 4 feet below grade. However, the structure may be cut off at grade in some cases. The determination will be site specific and will be based on the type of structure, land use at the site, and construction vehicle access constraints.

- **Cleanup and Restoration** – Upon completion of construction, cleanup and site restoration occurs. This includes removing construction mats, temporary bridges, and other material or debris from the ROW. Any necessary seedbed preparation and seeding is performed along with BMPs. Typical equipment used for these activities include mat trucks, skid loaders, pickup trucks, and other light-duty vehicles.
- **Demobilization** – The last step in the construction process is final cleanup of the laydown yards by removing all items such as trailers, security fence, left over materials, storage containers, portable toilets, dumpsters, construction mats, tools, and equipment from the Project site. Once the final laydown restoration is complete per contractual agreement with the applicable landowner, the construction phase is complete.

3.7. Kellogg Substation

The Kellogg Substation facilities are proposed to be sited on 4 acres within a larger 10.8-acre parcel of land. Approximately 4 acres of the site will be used for the substation, access road, and stormwater drainage features. Site preparation would include installing erosion and sediment control BMPs, stripping topsoil, and hauling in structural fill to build up the subgrade for the substation pad. Once the substation pad is built to the subgrade, all areas will be restored, and the site will be ready for use. This work will occur the year prior to transmission line and substation construction to allow for one winter to allow the ground to settle.

Construction within the newly prepared substation pad will consist of drilled pier foundations ranging in size from 3to 7 feet in diameter and 10 to 35 feet deep. The foundations will be installed to support transmission line dead-end structures, static masts, and bus and equipment support structures. Slabs-on-grade 8-feet square by 2 feet thick will be used for 161 kV circuit breakers, and 6-foot square by 2 feet thick will be used for 69 kV circuit breakers. The control building will be on a 20-foot by 40-foot- by 1-foot-thick concrete slab. Transformer and reactor secondary oil containment will be a concrete-lined pot filled with stone. Conduit for control and communication cables and grounding conductor will be installed prior to the placement of the final layer of crushed rock surfacing. The ground grid will be installed 18 inches below the subgrade surface throughout the substation pad and extend 4 feet outside the substation security wall.

3.8. Operation and Maintenance

The Applicant's long-term goal of the vegetation management maintenance program is to establish a sustainable ROW consisting of vegetation that would be considered compatible. The NESC states that "vegetation that may damage ungrounded supply conductors should be

pruned or removed." Trees along the ROW edge will need to be trimmed from time to time to manage the appropriate clearance distances between the conductors and the trees. To ensure continued safe operation of the line, tree removals may also occur outside the easement area when a tree tall enough to impact our facilities is dead, dying, diseased, leaning or compromised.

Integrated vegetation management practices are utilized in vegetation management program to establish the long-term goals of the program on a nominal 3- to 5-year cycle. The Applicant will implement the use of many control methods within their vegetation management maintenance program that vary based on site conditions and can include manual (chainsaws), mechanical (mowers and other specialized vegetation management equipment including aerial saws where appropriate) and herbicides. Herbicide application methods will vary based on vegetation density, size and location, time of year, environmental conditions and property owner or easement restrictions. Some application methods include basal, cut stump, foliar or cut stubble. In general, herbicide applications are selective in nature targeting woody species. Through the new easement acquisition process, landowners will be able to give or decline permission for the use of herbicides on their property.

The Applicant has developed a Vegetation Management Plan (VMP) to outline the practices that will apply to operational vegetation management activities across the Project.[37] The use of herbicides focuses on controlling woody vegetation within the ROW to reduce the impacts of the need to mow on a property and help establish a sustainable ROW that can be managed with selective herbicide treatments. A timeframe for the conversion of a ROW to establish compatible, non-woody vegetation will vary based on site conditions. A property owner could also encourage ROW conversion to compatible vegetation by allowing selective herbicide use and through planting vegetation that results in increasing compatible vegetation.

3.9. Project Costs

Estimated costs for the APR are approximately $32.4 million (2023 dollars). Costs and tasks are divided into six phases: permitting, land acquisition and ROW, design/engineering, procurement of materials, construction costs, and contingency. If the Commission selects a route other than the APR or imposes non-standard construction conditions, the Project cost estimates may change. These cost estimates assume that the Applicant will pay prevailing wages for applicable positions for the construction of the Project. All capital costs for the Project will be borne by the Applicant. Additional cost associated with constructing the RSAs range from an estimated $3.7 million for RSA-F to $1.5 million for RSA-GAA-1.

3.10. Project Schedule

The Applicant anticipates conducting site preparation activities at the Kellogg Substation site between June and July 2026 (**Table 4**). At that time, they would build the Kellogg Substation and

[37]MDOC. https://efiling.web.commerce.state.mn.us/documents/%7B6066818E-0000-C8CD-B2BD-BD4481CD0FB7%7D/download?contentSequence=0&rowIndex=74

161 kV transmission line between June 2027 and July 2028. The start of construction is dependent on the receipt of all required permits and approvals. The Applicant anticipates that the Project will be energized in July 2028.

Table 4. Anticipated Permitting Schedule.

Permit Stage	Anticipated Date
Certificate of Need and Route Application Filed	March 2024
Scoping Meeting	June 2024
EA Published for Public Review	January 2025
Public Hearing	February 2025
Commission Decision	Summer 2025
Kellogg Substation Construction	Summer 2026
161 kV Transmission Line Construction	July 2027-July 2028

4. POTENTIAL PROJECT IMPACTS

This section provides an overview of the resources, potential impacts, and mitigation measures associated with the route, ROW, and alignment as proposed in the Applicant's RPA. Specifically, this section analyzes and discusses:

- The human and environmental resources affected by the project;
- Potential impacts to human and environmental resources; and
- Opportunities to avoid, minimize, or mitigate potential impacts.

4.1. Potential Impacts

4.1.1.1. Potential Environmental Impacts

Potential impacts are measured on a qualitative scale based on 1) expected impact intensity level; and 2) how the impact intensity level takes mitigation into account. A potential impact is the anticipated change to an existing condition caused either directly or indirectly by the construction and operation of a proposed Project. Potential impacts can be positive or negative and short- or long-term. Impacts vary in duration and size, by resource, and across locations. In certain circumstances, potential impacts can accumulate incrementally. That is, impacts from the Project would be in addition to on-the-ground impacts already occurring.

To provide appropriate context, the following terms and concepts are used to describe and analyze potential impacts:

1) Duration: Impacts vary in length. Short-term impacts are generally associated with construction. Long-term impacts are associated with the operation of the Project. Permanent impacts extend beyond Project decommissioning and reclamation.
2) Size: Impacts vary in size: to the extent possible, potential impacts are described quantitatively. For example, the number of impacted acres or the percentage of affected individuals in a population.
3) Uniqueness: Resources are different. Common resources occur frequently, while uncommon resources are not ordinarily encountered.
4) Location: Impacts are location-dependent (for example, common resources in one location might be uncommon in another).
5) Context of an impact: In combination with its anticipated on-the-ground effect, context of impact is used to determine an impact intensity level, which can range from highly beneficial to highly harmful. Impact intensity levels are described using a qualitative scale, which is explained below.

These terms are designed to ensure common understanding among readers and to compare potential impacts between alternatives. Impacts can range from negligible to significant:

1) Not Significant impacts range from not altering an existing resource condition or function and are generally not noticeable to an average observer (negligible) to not

considerably altering an existing resource condition or function (minor). Negligible impacts are short-term impacts affecting common resources. Minor impacts are impacts that generally affect common resources over the short- or long-term.

2) Less Significant (Moderate) impacts alter an existing resource condition or function and are generally noticeable to the average observer. Impacts might be spread out over a large area making them difficult to observe but can be estimated by modeling. Moderate impacts might be long-term or permanent to common resources but short- to long-term to uncommon resources.

3) Significant impacts alter an existing resource condition or function to the extent that the resource is impaired or cannot function. Significant impacts are likely noticeable or predictable to the average observer. Impacts might be spread out over a large area making them difficult to observe but can be estimated by modeling. Significant impacts can be of any duration and affect common or uncommon resources.

Also discussed are opportunities to mitigate by avoiding, minimizing, or compensating for potential impacts. Collectively, these actions are referred to as mitigation:

- **To avoid** an impact means to eliminate it altogether, for example, by not undertaking parts or all of a project, or relocating the project.
- **To minimize** an impact means to limit its intensity, for example, by reducing project size or moving a portion of the project.
- **To correct** an impact means fixing it by repairing, rehabilitating, or restoring the affected resource, or compensating for it by replacing it or providing a substitute resource elsewhere. Correcting an impact can be used when an impact cannot be avoided or further minimized.

Some impacts can be avoided or minimized; some might be unavoidable but can be minimized. Other impacts might be unavoidable and unable to be minimized but can be corrected. The level at which an impact can be mitigated might change the impact intensity level.

4.2. Regions of Influence

Potential impacts to human and environmental resources are analyzed in this EA within specific spatial bounds or regions of influence (ROI). The ROI for each resource is the geographic area within which a particular impact may exert some influence. This EA uses the ROI concept as the basis for assessing the potential impacts to each resource because of the proposed Project. The ROI for the impacts analyzed in this EA are summarized in **Table 5**.

Table 5. Regions of Influence.

Resource or Issue	Specific Resource or Issue	Region of Influence
Human Settlement	Displacement	ROW
	Aesthetics, Electronic Interference, Noise, Property Values, Zoning, Land Use Compatibility	500 feet
	Public Utilities, Emergency Services, Roads	1 mile
	Socioeconomics, Cultural Values, Airports	Wabasha County
	ROW Sharing	500 feet (or route width)
Public Health and Safety	Electric Magnetic Fields, Implantable Medical Devices, Stray Voltage, Induced Voltage	500 feet
Land-based Economics	Agriculture, Forestry, Mining	ROW
	Tourism, Recreation	1 mile
Archaeological and Historical Resources	Archaeological Resources, Historical Resources, Tribal Resources	1 mile
Natural Resources	Topography, Geology, Groundwater, Surface Water, Wetlands, Vegetation, Soils, Wildlife	ROW
	Air	Wabasha County
Rare and Unique Resources	Listed Species	1 mile

The ROI for most human and environmental resources is the permanent footprint of the proposed Project, as represented by the transmission line ROW. Resources within the footprint, such as soils and trees, are more likely to be impacted by the construction and operation of the proposed Project. In this EA, the following ROIs will be used:

- **ROW** – A distance of 100 feet (50 feet on either side of a proposed alignment) is used to analyze the impacts of displacement, agriculture, forestry, mining, topography, soils, vegetation surface water resources, and wildlife. Although the actual alignment may differ from that proposed by the Applicant and the ROW may be somewhat smaller or larger in certain areas, use of a standard ROW along the anticipated centerline(s) provides for a consistent assessment of potential impacts.
- **500 feet** – A distance of 250 feet either side of the proposed alignment is used as the ROI for analyzing potential impacts to aesthetics, noise, property value and electric and magnetic fields impacts.
- **1 Mile** – A distance of 1 mile from the proposed alignment is used as the ROI for analyzing potential impacts to archaeological and historic resources and rare and unique species. Direct impacts, if they occur, are anticipated to diminish relatively quickly such that the potential impacts outside the route would be minimal to moderate. However, indirect impacts may extend beyond the route.
- **County** – Wabasha County is used as the ROI for analyzing potential impacts to cultural Same as values, socioeconomics, public utilities, airports, air quality, and emergency services. These are resources for which impacts may extend throughout communities in the Project area.

4.3. Environmental Setting

The Project area is located within the Rochester Till Plain physiographic region. The Rochester Till Plain consists of a broad region blanketed in glacial till and outwash, although the most recent Wisconsinan advances (75,000 to 11,000 years ago) did not cover the area. The region is described as generally "featureless" and is dominated by an elevated expanse that ranges from flat to gently undulating. Exceptions to the lack of topographic relief that generally characterizes the region occur near the Mississippi River in the form of deeply dissected tributaries. The deeply dissected valleys along the Mississippi River give the eastern edge of the region a mountainous look. Sedimentary rocks mantled by colluvium or loess outcrop along the valley slopes of creeks and rivers throughout the eastern portion of the region.[38]

The western portion of the APR and RSA-A through RSA-F cross over a rolling upland divide covered in pasture and row-crop fields, with scattered fallow patches and developed area. The upper portions of several intermittent drainages flow through these alignments as constructed grass waterways or heavily channelized streams. From approximately MP 8.5 to MP 10.0 along the APR and RSA-GAA-1 and RSA-GAA-2 transect slightly rugged blufflands on the western edge of the Mississippi River trench. Vegetation includes patchy and fairly continuous upland forest and pasture. Around MP 10.0, the APR enters the flat Mississippi River trench and valley floor, including Gorman Creek at the foot of the bluffs. Topography is level to slightly undulating. Kellogg and surrounding homes and business occur immediately east of U.S. Highway 61. The eastern leg of the APR crosses over agricultural fields into the Kellogg

[38] MDNR. Ecological Classification System Descriptions. Retrieved December 8, 2024, from http://www.dnr.state.mn.us/ecs/222L/index.html.

Substation. McCarthy Lake is located east of the Canadian-Pacific Railroad and immediately north of the APR.

Project overview photographs taken during a reconnaissance of the Project area are presented in **Appendix C**.

4.4. Impacts to Human Settlement

Construction and operation of new HVTLs have the potential to impact human settlement. These impacts might be short-term (an influx of construction jobs during construction) to long-term (changes in land use).

4.4.1.1. Aesthetics

Aesthetics or visual quality is one of the most commonly cited concerns associated with transmission lines. Aesthetic value is largely determined by the observer and can vary. However, there are several key components that are generally associated with landscapes that are considered higher quality. These components are form, line, color and texture.[39] Changes that are consistent with a landscapes basic components are said to be in harmony with the surrounding while changes that are inconsistent tend to stand out and cause more visual impact. In addition, how an area is used affects how observers tolerate change. Visual changes tend to affect workers and commuters less than recreationalists and residents.

Aesthetic impacts reflect the human subject's reaction to a landscape change, though may also affect a population where the visual landscape defines a visual identity. This means that potential impacts are unique to an individual or group, with reactions that can vary widely. Potential impacts might dissipate over time depending on the individual. Impacts will be both short- and long-term and localized. Potential impacts are unavoidable but can be minimized and mitigated with BMPs.

Aesthetic impacts are often greatest when associated with residential property, Scenic Byways, Historic/Archaeological/ Natural Features, Cultural Values, or National Monuments. Aesthetic impacts are less impactful when located near existing built structures such as utility corridors, roads, railways, and pipelines.

The eastern half of the Project area is relatively flat and dominated by the agricultural land uses with scattered farmsteads and natural wooded landscapes. The western half consists of rolling topography with large tracts of natural wooded areas with agricultural activities located on flatter topography in the valleys. Various water features also make up the environmental setting including wetlands, ponds, streams, lakes including McCarthy Lake, Gorman Creek, and the Mississippi River to the east of the Kellogg Substation.

Recreational uses throughout the Project area consist of Zumbrowartha Snowmobile Trail, McCarthy Lake Wildlife Management, and Great River Road National Scenic Byway.

[39] Bureau of Land Management. Visual Resource Manual. Retrieved January 29, 2025, from https://www.blm.gov/programs/recreation/recreation-programs/visual-resource-management.

Zumbrowartha Snowmobile Trail intersects the Project area within an agricultural area along an existing utility corridor (**Appendix B, Map 8**). The snowmobile trail intersects the Project area again within the ROW of the Great River Road National Scenic Byway. Just outside the ROI is the Zumbro River about 0.3 miles north and east of the Kellog Substation and the Mississippi River about 0.5 miles east of the Kellog Substation.

The Great River Road National Scenic Byway is a network of roads along the Mississippi River that crosses through ten states. The Project crosses U.S. Highway 61, which is designated as the Great River Road within the Project area. The National Scenic Byway was designated to promote exploration and interpretation of the Mississippi River. In Minnesota, the Great River Road is overseen by the Mississippi River Parkway Commission (MRPC). During the Project scoping process, the MRPC was contacted to identify measures to avoid impacts to the scenic byway.

Sensitive observer's structures throughout the project area are summarized in **Table 6**.

Table 6. Summary of Visual Impacts.

Route Alternative Segments	Structures with 500 feet			Impact to Zumbrowartha Snowmobile Trail	Great River Road
	Commercial	Outbuilding	Residence		
APR	6	56	21	Yes	Yes
RSA AAA-1	6	45	20	Yes	Yes
RSA AAA-2	6	45	20	Yes	Yes
RSA B	6	41	17	Yes	Yes
RSA C	6	43	19	Yes	Yes
RSA D	6	41	17	Yes	Yes
RSA EAA-1	6	39	16	Yes	Yes
RSA EAA-2	6	40	17	Yes	Yes
RSA F	6	40	17	Yes	Yes
RSA GAA-1	6	55	21	Yes	Yes
RSA GAA-2	6	53	21	Yes	Yes

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operations (Long term)

Size: The size of the impact would be linear based on the ROI width of 500 feet for the length of the Project of 13.3 miles. Aggregating the length by the width and adding the acreage of the substation would be about 816.8 acres.

Uniqueness: Common

Location: The location of impacts to aesthetics are along the proposed route where new utility infrastructure will be located, with more significant areas located along the bluffs west of the Mississippi River.

Context: RSA GAA-1 and RSA GAA-2 are expected to have the most impact on visual resources due to second and third most structures within the ROI, tree clearing outside of existing ROW, and impacts to the Zumbrowartha Snowmobile Trail and the Great River Road Scenic Byway.

The Project area is located along existing utility corridors where residents and recreationalists are acclimated to build structures. The Project will cross the Great River Road National Scenic Byway at MP 9.7 approximately 0.1 mile south of the intersection with State Highway 42. The surrounding land uses at this crossing consist of agricultural fields.

The APR has the most structures within the ROI, but most of these structures are located along State Highway 42 where existing utility corridors exist. The APR will be collocated with existing utilities to reduce aesthetic impacts. In addition, limited tree removal would be necessary for the APR due to its location within existing utility corridors for most of its length.

The installation of the Xcel and Peoples distribution line would have no indirect effects on aesthetic concerns, as the lines would be buried.

Significance: Due to the location of the Project within existing ROW and with the implementation of the mitigation measures outlined below, impacts to aesthetic concerns are expected to be minor.

Mitigation

The following mitigation measures will be implemented to reduce visual impacts caused by the Project.

- Tree clearing will be minimized as much as possible.
- Site poles behind natural screens such as treed areas and hills to the extent practicable to screen from observers.
- Use perpendicular crossings rather than parallelling roadways.
- Set back poles as far as possible.
- Choose a color for the poles that harmonizes with the existing landscape.

4.4.1.2. Cultural Values

Cultural values are learned community beliefs and attitudes that provide a framework for individual, and community thought and action. Cultural values are informed, in part, by ethnic

heritage. This discussion focuses on cultural values associated with post-settlement communities; cultural values and traditional practices related to Native American interactions with the landscape are presented in **Section 4.8.**

Wabasha County was first settled by European settlers in 1826. When Minnesota was designated as the Minnesota Territory in 1849, it was divided into nine counties, one of which was Wabashaw County.[40] The "w" was dropped from the county name in 1868 after mapmakers and published statues abandoned it[41]. Fur traders were the first Euro-Americans to move into the region followed by lumbermen, farmers, and land speculators.[42]

Current county residents self-report having primarily German, Irish, Norwegian, English, and Swedish ancestry[43]. Minority populations in the county consist of African American, Hispanic or Latino, Asian, and American Indian and Alaska Native.[44]

Based on the US 2020 Census the total population of Wabasha County is 21,387. The 2022 American Community Survey indicates that the top five industries in Wabasha County are (a) educational services, and health care and social assistance, (b) manufacturing, (c) retail trade, (d) construction, (e) and agriculture, forestry, fishing, hunting, and mining[45].

Common amenities throughout the county include restaurants, campgrounds, recreational facilities, shopping, state parks, and residential neighborhoods.[46] City and county websites highlight the natural or scenic views of the area, midwestern charm, and recreational opportunities.

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Common across Project, but fairly unique along bluff line on the western edge of the Mississippi River trench where the construct of topography and exposed bluffs are present.

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[40] Wabasha County Historical Society & Museum. Wabasha History. Retrieved December on 22, 2024, from https://www.wabashacountyhistory.org/history,.

[41] Wabasha County. Wabasha's Chronological History & Heritage. Retrieved December 22 2024, from https://www.wabasha.org/community-resources/about/wabashas-chronological-history-heritage/.

[42] Wabasha County Historical Society & Museum. History. Retrieved December 22, 2024, from https://www.wabashacountyhistory.org/history.

[43] USCB. Explore Census Data. Retrieved November 24, 2024. from https://data.census.gov/table?q=DP02&g=050XX00US27157.

[44] USCB. Explore Census Data. Retrieved November 24, 2024. from https://data.census.gov/profile/Wabasha_County,_Minnesota?g=050XX00US27157#race-and-ethnicity

[45] USCB. Census Data. Retrieved November 24, 2024. from https://data.census.gov/table/ACSDP5Y2022.DP03?g=050XX00US27157.

[46] Wabasha County. Parks and Natural Areas. Retrieved November 24, 2024. from https://www.wabashamn.org/directory-category/parks-natural-areas/.

Context: The natural or scenic views of the area and recreational opportunities throughout the ROI include hunting, fishing, wildcrafting, and hiking throughout Richard J. Dorer Memorial Hardwood State Forest and McCarthy Lake Wildlife Management Area (**Appendix B, Map 8**).

The installation of the Xcel and Peoples distribution line would have no indirect effect on cultural values.

Significance: Impacts to cultural values are expected to be negligible. The Project is not expected to impact the cultural values of Wabasha County or its communities. No businesses, residences, churches, government facilities, or institutions will be displaced, relocated, or closed during the construction or operation of the Project. Recreational opportunities throughout Richard J. Dorer Memorial Hardwood State Forest and McCarthy Lake Wildlife Management Area may be temporarily impacted during construction but will continue as normal upon completion of construction.

Mitigation

Impacts to cultural values can be mitigated by:

- Preserve the natural landscape as much as possible.
- Construction and operation should be connected in a way to minimize destruction and scarring of the natural landscape.
- Compensate landowners for removal of trees and other vegetation.
- Place structures the maximum feasible distance from water crossings.
- Poles should be colored to match the surrounding landscape.

4.4.1.3. Displacement

In relation to transmission line projects, displacement typically occurs when a residence, commercial building, or other structure is within the ROW and removal is necessary for the safe operation of the transmission line. Minimum clearances between transmission lines and objects such as trees, buildings, or other structures have been designated by the NESC standards and the Rural Utilities Service (RUS) to safeguard the operation of transmission lines. Nine feet is required by NESC and up to 12 feet required by RUS, but Dairyland's Standard of Practice is to maintain a minimum of 12 feet horizontal distance with and without wind for lighting and traffic signal support and 14 feet for buildings with and without wind, which exceeds NESC and RUS requirements. The Commission considers effects on human settlement including the number of potential displacements, when determining to permit a route.

Numerous residences, commercial, and accessory structures are located throughout the ROI as well as agricultural operations (i.e., cropland and livestock operations). The nearest structure is a commercial structure identified as Cow Pokes Western Shop, which is located near the intersection of State Highway 42 and 596th Street. The closest residence is approximately 134 feet away from the APR near the State Highway 42 intersection with 615th Street.

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Throughout the corridor alignments.

Context: There are number of residences, commercial and agricultural buildings, and other buildings within 500 feet of the APR and RSAs (see **Appendix B**). The Applicant indicates that final design will realign the transmission line within the approved route so that the permanent right-of-way would avoid direct impacts to residences or other buildings.

The installation of the Xcel and Peoples distribution line would have no indirect effect on displacement.

Significance: No displacement of any residence, buildings, businesses, or structures will occur as a result of the project. The width of the alignment provides sufficient design flexibility and distances from existing homes and structures for the transmission line design to achieve the clearances required by the NESC. Impacts are expected to be negligible.

Mitigation

The project will be designed to avoid any displacement of homes or businesses, with tower placement to avoid impacts to irrigation systems of agricultural operations. Agricultural operations will be able to continue to operate. The Applicant will work with landowners growing crops to reduce the impact to operations during planting and harvesting seasons while the project is being constructed.

4.4.1.4. Electronic Interference

The localized electric fields near an energized transmission line conductor can ionize nearby air by producing small electric discharges when certain conditions (or irregularities on the conductor, dust buildup, or water droplets, and other intrusions) occur. This is commonly referred to as the "corona" effect. The air ionization or "corona discharges" can result in audible and radio frequency noise or electronic interference. This electromagnetic noise from the transmission line may interfere with electronic communications such as television broadcast, AM radio frequency, and cellular phone signals. Television and cellular phone signals use higher frequencies than which the electromagnetic noise generated by the transmission line conductors will produce. AM radio frequencies are most commonly affected by electromagnetic noise.

Potential Impacts

ROI: 500 feet

Duration: Operation (Long term)

Size: N/A

Uniqueness: Uncommon

Location: Localized to cell, television, and radio towers

Context: Electronic interference caused by the operation of the transmission line is not anticipated but may occur. Signals that require high frequency, such as cellular phones and television signals, are not likely to experience electronic interference. Television signals may be interfered with by line-of-sight; this type of interference is managed by slightly moving the location of satellites and antennas.

The installation of the Xcel and Peoples distribution line would not indirectly contribute to electrical interference.

Significance: There is a cellular tower located approximately 130 feet south of the proposed centerline of the APR, south of State Highway 42. Although the proposed Project is located within 500 feet of the cell tower, electronic interference with this cellular tower to be negligible. Television, cellular phones, and GPS units operate at frequencies outside of the range of electromagnetic noise. Impacts to radio signals are expected to be negligible.

Mitigation

Because no impacts to radio, television, cellular phones, or GPS units are anticipated, no mitigation measures are proposed for this Project. If interference with television signals were to occur through multi-path reflections or line-of-sight interference, it can be mitigated by using an outdoor antenna to improve signal or by moving the affected satellite to a slightly different location.

4.4.1.5. Land Use and Zoning

Wabasha County is primarily a farming community that is comprised of seventeen townships, nine cities, and two villages with approximately 21,000 residents. The Zumbro River bisects the County and the Mississippi River is along the eastern border along with other aquatic resources that have floodplain and shoreland designated areas. The County roadway network is the largest transportation network, and U.S. Highway 61 is the only regional state highway in the county.

The Project area includes land that has undergone significant development, including agricultural farming, development of private and public rights-of-way for roads, railroads, pipelines, and an electrical transmission line, and construction of solar-generating facilities. Other land uses in the county within or near the Project include conservation easements and USACE property to store dredge material.

Comprehensive Land Use Plan

The Wabasha County Board of Commissioners adopted the Comprehensive Land Use Plan in August 1998 to guide development and management activities throughout the county. The Plan divides Wabasha County into four geographic areas that are identified as the Agricultural Area, Common Interest Areas, the Lower Valley area, and the Upper Valley Area. The plans is set up to guide ways to address major issues of concern to Wabasha County. These issues include conflicts caused by non-farm residential development in agricultural areas and environmental

issues including water quality, steep slope development, feedlot development, and blufftop development.

Zoning

Wabasha County has adopted a zoning ordinance which purpose is to "promote, preserve, and protect the public health, safety, and general welfare of the citizens of Wabasha County, along with the integrity of the land and water resources of the County" (Wabasha County Zoning Ordinance).[47] The Project area is within zoning districts A-1 (Agricultural Protection) and A-2 (Agricultural Fringe). These districts are designated to maintain, conserve, and enhance agricultural lands that are historically important for agricultural production and to provide for agricultural use and urban expansion in areas close to incorporated urban centers within Wabasha County. In addition to the zoning districts, there are three overlay districts: floodplain, shoreland, and bluff land. These overlays are implemented to protect sensitive resources within the county. The Project area crosses the Shoreland Overlay Zone for 2.1 miles and 1.6 miles of the General Floodplain District. The Project area does not impact bluff land districts (**Figure 5**) Bluff land area is defined as an area that has a rise of 25 feet, with an average slope of 18 percent or greater. In these areas, there is a 30-foot structure setback requirement from either the toe or top of a bluff.[48]

Public Land

The U.S. Army Corps of Engineers (USACE) owns 994 acres (referred to as the Rolling Prairie Multiple Use Area) of cropland that intersect with the Project area near the eastern terminus of the project. This land has been designated to store sediment dredged from Pool 5 of the Mississippi River for the next 100 years. As dredge material is placed on the site, the USACE has future plans to create a rolling prairie habitat that can be open to the public for recreational purposes. The Project area intersects the property in Section 36, Township 110 North, Range 10 West where the Project runs north to south along the western edge of the property and then west to east along the south side of County Road 84. The USACE expressed concern with the clearance under the transmission line and whether that would affect the site's development. However, during the siting process it was determined that the proposed alignment would not affect the site's development.

Conservation Easements

The Project area borders a conservation easement on private land held by the Minnesota Board of Soil and Water Resources (BWSR) near the eastern terminus of the project. The Project and the ROW are outside of the easement boundaries.

[47] Wabasha County. County Ordinances Wabasha County, MN. Retrieved November 24, 2024. from https://www.co.wabasha.mn.us/government/ordinances.php.
[48] Wabasha County. Wabasha County Land Use Permit Checklist. Retrieved November 24, 2024. from https://www.co.wabasha.mn.us/government/ordinances.php.

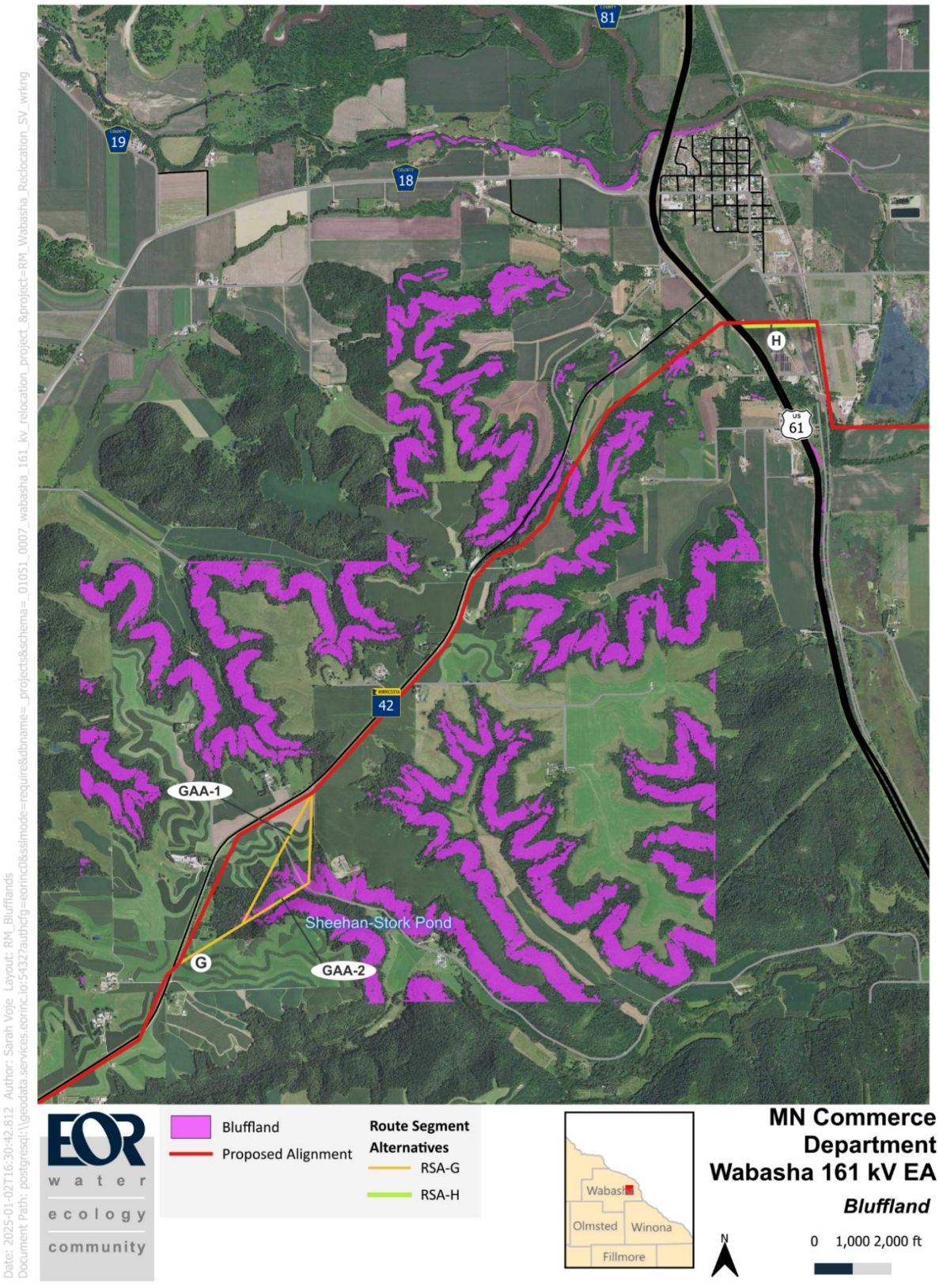

Figure 5. Bluff land and Route Segment Alternatives.

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Project area

Context: The 100-foot width easement necessary for the proposed route would allow continued land use activities under the 161 kV line. The area necessary for structural tower bases ranges from 5.2 to 14.2 square feet and the span between bases is between 300 to 1,000 feet. The tower base would impact activities but would allow existing land use to continue such as agricultural activities adjacent to the base. The exact number of towers is unknown until geotechnical borings and design work is completed to locate towers. However, based on the proposed 13.3-mile total Project distance, approximately 80 to 240 towers would be necessary. In addition, the Kellogg Substation will change the land use of 10.8 acres of agricultural land.

The installation of the Xcel and Peoples distribution line would not indirectly affect land use or zoning, as the line would be placed within the existing public ROW along state and local roads.

Significance: The impact intensity level for land use is anticipated to be minor for common agricultural land uses due to the potential number of tower bases necessary for the Project. This impact would be noticeable to landowners who farm property that may have new towers located across their fields. Farming equipment will need to avoid tower bases and go around the structures, which may be placed inconveniently (see Sections **4.5.1.1** and **4.5.1.3** below). These impacts would be long-term. In addition, the Kellog Substation will remove 10.8 acres of agricultural land from production.

Residential properties and other structures are located within the vicinity of the Project but APR would cross the Cowpokes Western Shop. The APR alignment would need to be engineered to avoid placing structures that would interfere with this business.

Impacts in the Bluffland Area from RSA- GAA-1 and -GAA-2 are not expected as long as the location of structures from the top or toe of a bluff is a minimum of 30-feet. This will need to be further assessed during engineering if one of these RSAs are selected.

Mitigation

The APR and RSAs are collocated along existing road ROW and other linear features where possible to minimize changes to land use. The Applicant will coordinate with landowners during the easement acquisition process to address alignment adjustments or pole placement, especially if crossing structures such as APR crossing the Cowpokes Western Shop. When possible, pole placement will be placed at property lines where farming impacts would be less. The design will maximum the distance between tower bases as practicable to also minimize farming and other land use impacts. Clearance to buildings and ROW widths will comply with local, state, NESC, and Dairyland Standards. Compensation for easement acquisition will follow all federal and state laws.

In addition, Wabasha County has Bluffland Area protections will need to be assessed when engineering the project to confirm requirements of this area can be complied with. County zoning setbacks for shoreland and floodplains will also be followed for any potential pole placement.

4.4.1.6. Noise

Noise is generally defined as any undesired sound. Sound travels in a wave motion and produces a sound pressure level measured in decibels on a logarithmic scale. An A-weighted scale (dBA) is used to replicate the sensitivity of the human ear. A 10 dBA increase is perceived as sound doubling in loudness. Likewise, a 10 dBA decrease is perceived as sound decreasing by one-half. The MPCA has established standards for the regulation of noise levels during the daytime and nighttime in Minn. R. 7030.0040.[49] In Minnesota, noise impacts are evaluated by modeling the decibel levels that are expected to be exceeded 10 percent and 50 percent of the time. These levels are identified as L10 and L50, respectively. The L10 level is the noise level that is exceeded by 10 percent, or 6 minutes, of an hour. The L50 level is the noise level that is exceeded by of 50 percent, or 30 minutes, of an hour. Permissible noise levels differ between daytime and nighttime hours.

Surrounding land uses generally affect the noise level that a person considers acceptable or unacceptable, with lower levels expected in residential areas versus industrial zones. The allowable decibel level in Minnesota depends on the land use and the location of the person who hears the noise (receptor). These noise area classifications (NAC) and respective standards are defined by four classifications summarized below in **Table 7**.

Table 7. State of Minnesota Noise Standards

Land Use	NAC Classification	Daytime (7 A.M. – 10:00 P. M.) dBA		Nighttime (10 P.M. – 7:00 A.M.) dBA	
Residential	NAC-1 (1)	L_{10}: 65	L_{50}: 60	L_{10}: 55	L_{50}: 50
Commercial	NAC-2 (2)	L_{10}: 70	L_{50}: 65	L_{10}: 70	L_{50}: 65
Industrial	NAC-3 (3)	L_{10}: 80	L_{50}: 75	L_{10}: 80	L_{50}: 75
Undeveloped Land	NAC-4 (4)	N/A (4)	N/A (4)	N/A (4)	N/A (4)

Note:
(1) NAC-1 classification examples include residential housing, religious activities, camping and picnicking areas, health services, hotels, and educational services.
(2) NAC-2 classification examples include retail, business and government services, recreational activities, and transit passenger terminals.
(3) NAC-3 classification examples include manufacturing, fairgrounds and amusement parks, agricultural and forestry activities.
(4) NAC-4 includes undeveloped and unused land. There are no noise standards for these areas.

[49] Mn R. Part 7030.0040

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Common throughout the Project area.

Context: Noise created by *construction* activities are anticipated to be minimal for both the APR and RSAs. As *operational* noises are not expected to rise above background levels for any significant time period, potential impacts are expected to be minimal. Noise created by *construction* activities are anticipated to be minimal for both the APR and RSAs.

The installation of the Xcel and Peoples distribution line would only have a short-term effect (construction) on noise levels.

Significance: Impacts are expected to be negligible to minor during construction and negligible during operations.

Mitigation

Impacts are unavoidable but can be minimized. The contractor will take reasonable measures to control construction-related noise, including limiting transmission line and substation construction activities to daylight hours, maintaining equipment in good working order, and using manufacturer-supplied silencers on heavy equipment when available and when required by local ordinances. Operational noise is expected to be minimal, but will be minimized by using industry standards during design and construction.

4.4.1.7. Property Values

When introducing infrastructure uncharacteristic to the existing infrastructure or nature of an area, positive and negative impacts to property values can occur. For example, the introduction of a road or utilities to a rural area identified for future residential development could provide a positive impact to property values. Conversely, the addition of roads and utilities supporting commercial or industrial development-an area that has typically been used for residential purposes, could experience negative effects on their residential property values.

With regards to the construction of transmission lines in rural areas and their effect on property values, based on a literature review completed in 2010, on the effects of transmission lines on property values, found that there is minimal to no impact (damage) on rural land values from transmission lines.[61] Similarly, a study funded by a utility completed in 2007, included market interviews and reviews of literature research, as well as empirical research had a finding of powerlines having little (to if any) impact on property values. [62] Even with analysis such as this, fear and the perceived negative impacts transmission lines have on the aesthetics of a location may influence the public's buying habits when considering properties crossed by or adjacent to transmission lines, which may in turn, effect property values.

Potential Impacts

ROI: 500 feet

Duration: Operation (Long term)

Size: N/A

Uniqueness: Common

Location: Common throughout the Project area.

Context: A summary of parcel information as provided in **Table 8**[50] and Wabasha County Map[51] identified the following breakdown of landowners crossed by the 100-foot ROW for the APR and RSAs, with parcel boundaries illustrated Appendix B maps.

Table 8. Total Number of Landowners within ROI

Route Segment Alternative	Ownership Parcels Crossed (Approximate Type and Number)
APR[1]	Private – 27 State (DOT) – 1 Railroad – 1 Federal (USACE) - 2
RSA AAA-1	Private – 3
RSA AAA-2	Private – 3
RSA B	Private – 2
RSA C	Private – 1
RSA D	Private – 2
RSA EEA-1	Private – 5
RSA EEA-2	Private – 5

[50] Onxmaps. GPS Map App for Hunting, Hiking & Off-Roading. Retrieved December 2, 2024, from https://www.onxmaps.com/.
[51] Beacon. Wabasha County, MN - Map. Retrieved December 15, 2024, from https://beacon.schneidercorp.com/Application.aspx?AppID=407&LayerID=6257&PageTypeID=1&PageID=3333.

Route Segment Alternative	Ownership Parcels Crossed (Approximate Type and Number)
RSA F	Private – 4
RSA GAA-1	Private – 3
RSA GAA-2	Private – 4 State (State Forest) - 1

Although the private landowners may have no intentions of selling their property now, during the scoping meetings, concerns were raised by landowners along the proposed routes regarding the potential for property value impacts if the project were to be located on their property.

Significance: The proposed Project is expected to have minor impacts to property values. Real estate market conditions in the past five years in the southwest region of Minnesota continue to experience significant increases in value, in spite of corelating factors such as increased interest rates and new development or increased inventory.

Residential sale prices in southeast Minnesota are increasing at a faster pace than even what is trending nationally. Per the Southeast Minnesota Realtors October 2024 Monthly Indicator Report, for residential real estate, the median sales price has increased by 7.4 percent and the average sales price by 6.4 percent since the same time in 2023. In this report, it compares these prices to the to what the overall trend has been across the country,

"Even with improving supply and slower sales pace, home prices have continued to rise nationwide, with NAR [National Association of Realtors] reporting a median existing-home price of $404,500 as of last measure, a 3% increase from one year ago."[52]

Even with the increasing sale trends, having a transmission line crossing or in vicinity of a residential property can have an affect property value and sale timelines. A review of over a dozen published studies (from 1964 to 2009), that used either survey-based data or actual real estate sales data, on the effects of transmission line impacts to property values was completed by Texas A&M University and Real Property Analytics, Inc. for the Journal of Real Estate Literature in January 2010. The conclusion on the review of these studies presented as follows:

"*The studies reviewed, while having some inconsistencies in their detailed results, generally pointed to small or no effects on sales price due to the presence of electric transmission lines. Some studies*

[52] SEMNR. Southeast Minnesota Realtors October-Focus-Report.pdf. Retrieved January 24, 2025, from https://www.semnrealtors.com/wp-content/uploads/October-Focus-Report.pdf.

found an effect but this effect generally dissipated with time and distance. The effects that were found ranged from approximately 2% to 9%." [53]

One of the studies included in this review was an opinion study completed in 1985 in northwestern Wisconsin and was published in *Right of Way* magazine by C.L. Solum. As part of this study, Solum received responses from 180 landowners that had existing transmission lines ranging from 69 kV to 161 kV on their property. These properties were characterized either as agricultural, recreational, or residential. In general, concerns provided by landowners with regards to the transmission lines on their property included farming around transmission structures on agricultural lands, loss of future timber value on recreational lands, and loss of aesthetic beauty for residential properties. Concerns on property value were also raised by some of the landowners. To further analyze this, Solum interviewed buyers and sellers of properties encumbered by a transmission lines. Per his interviews, all but one of the properties with an existing transmission line sold at market price when compared to properties without a transmission line and none of the buyers reduced their offer because of the presence of an existing transmission line. [54]

It is recognized that existing property values are variable and unique, complicating the application of potential project impacts to property values difficult to calculate with certainty. The majority of the APR and RSAs follow existing linear features, including roads and other aboveground utilities which assists in minimizing direct effects to private property. Additionally, the project will not significantly reduce the use of the land for agricultural purposes nor remove areas from future development. As noted above in **Section 4.4.1 Aesthetics**, mitigation measure will be used to reduce impacts to aesthetics.

Mitigation

Mitigation measures that can be implemented to reduce potential Project-related property value impacts include:

- Reduce impacts to aesthetics.
- Avoid impacting future land uses.
- Use measures or conditions specific to each individual easement agreement with landowners (i.e., restoration or vegetation management) including potential negotiation for compensation of perceived real or loss to property value.

4.4.1.8. Socioeconomic and Environmental Justice

The socioeconomic setting was evaluated on a regional basis, comparing data for Wabasha County and the State of Minnesota. Data compiled from the U.S. Census Bureau are summarized in **Table 9**.[55]

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[53] Jackson, T.O. and Pitts, J. The Effects of Electric Transmission Lines on Property Values: A Literature Review. The Journal of Real Estate Literature. January 2010.

[54] Solum, C.L. Transmission Line Easement Effect on Rural Land in Northwest Wisconsin. Right of Way, 1985, April, 14–8.

[55] USCB. Explore Census Data. Retrieved November 31, 2024, from https://data.census.gov/.

Table 9.Socioeconomic Characteristics within the Project Area.

Location	2022 Population	White Alone Population	Median Income (2018-2022)	Percent Below Poverty Level	Language other than English Spoke at Home (2018-2022)
Minnesota	5,714,300	82.6%	$84,313	9.6%	12.0%
Wabasha County	21,658	96.8%	$75,063	7.5%	3.1%

An environmental justice analysis for the Project was completed using the methodology in Minn. Stat. § 216B.1691, subd. 1(e) (rev. 2023). The statue states – in part – that an Environmental justice area means an area in Minnesota that (based on the most recent data published by the United States Census Bureau) meets one or more of the following criteria:

- 40 percent or more of the area's total population is nonwhite;
- 35 percent or more of households in the area have an income that is at or below 200 percent of the federal poverty level;
- 40 percent or more of the area's residents over the age of five have limited English proficiency; or the area is located within Indian country, as defined in United State Code, title 18, section 1151."

Census tracts that intersect with the assessment area were analyzed for environment justice areas, consistent with this statute. Census tracts are the best approximation of a geographic area where adverse impacts can occur from the Project.[56] The assessment area intersects one census tract identified in Wabasha County was used as a reference population for the census tracts (**Table 10**).

Table 10. Environmental Justice Communities.

Census Tract	Percent People of Color	Percent Below 200% of Poverty Level	Percent Limited-English Speaking Population (2017-2021)
Census Tract 4902	2.9	16.2	0.3

[56] MPCA. Maps. Accessed November 31, 2024, from https://mpca.maps.arcgis.com/apps/MapSeries/index.html?appid=f5bf57c8dac24404b7f8ef1717f57d00.

MPCA's "Understanding Environmental Justice in Minnesota" web-based mapping tool was used by drawing the Project Route Width into the mapping tool to determine whether the Project intersects any census tracts with environmental justice populations (as defined above). Based on the data provided in MPCA's web-based mapping tool, the assessment area did not interest any census tract containing an environmental justice community under the definition provided in Minn, Stat. § 216B.1691, subd. 1(e). Additionally, the assessment area is not within any areas defined as "Indian country."[57]

An environmental justice analysis in accordance with the U.S. Environmental Protection Agency (USEPA) Federal Interagency Working Group on Environment Justice (EJ) and National Environmental Policy Act (NEPA) Committee's publication, Promising Practices for EJ Methodologies in NEPA Reviews (Promising Practices) was also reviewed. Using this approach, the USEPA's Environmental Justice Screening Tool (EJScreen) was used as an initial step to gather information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors. The USEPA recommends that screening tools (such as EJScreen) be used for a "screening-level" look and a useful first step in understanding or highlighting locations that may require further review. EJScreen was used to evaluate potential Project impacts. Using EJScreen, the communities in this area are estimated to have 2 percent people of color and 17 percent low income.

According to *Promising Practices*, minority populations are those groups that include American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.[58] Following the recommendations set forth in *Promising Practices*, the 50 percent and the meaningfully greater analysis methods were used to identify minority populations. Consequently, minority populations are defined as either: 1) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or 2) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the county. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* low-income threshold criteria method, low-income populations are identified as block groups where the percent of low-income population in the identified block group is equal to or greater than that of the county. Wabasha County is the comparable reference community to ensure that all affected environmental justice communities are properly identified.

Table 11 identifies the minority populations by race and ethnicity and low-income populations within the State of Minnesota, Wabasha County, and the two U.S. Census block groups within the Census Tract within the assessment area. U.S. Census 2022 American Community Survey 5-Year Estimate Data File# B17017 and File# B03002 for the race, ethnicity, and poverty data were analyzed at the block group level. No block groups within the assessment area are considered environmental justice communities using the USEPA assessment tool.

[57] 18 United States Code 1151

[58] USEPA. EJ IWG Promising Practices for EJ Methodologies in NEPA Reviews. Retrieved December 1, 2024, from https://www.epa.gov/environmentaljustice/ej-iwg-promising-practices-ej-methodologies-nepa-reviews.

Table 11.Minority and Low-Income Populations.

State/County/Census Block Group	Total Minority[1]	Below Poverty Level
State of Minnesota	21.7%	9.3%
Wabasha County	6.0%	8.4%
Census Tract 4902, Block Group 2	3.4%	8.1%
Census Tract 4902, Block Group 3	1.9%	6.7%

[1] = Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.[59]

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: No Environmental Justice, low-income, or minority communities would be affected by construction of any of the APR or RSAs. No disadvantaged residences or business will be dislocated or adversely affected.

Location: No Environmental Justice communities would be affected by construction of any of the APR or RSAs.

Context: Impacts are anticipated to be negligible, as no Environmental Justice communities would be affected by construction of any of the APR or RSAs. Construction of the APR and RSAs would not result in unavoidable or irreversible impacts to Environmental Justice communities.

During construction, there may be short-term positive impacts to the nearby communities. Potential increases in local revenue may occur for businesses (such as hotels, grocery stores, gas stations and restaurants) to support construction workers and other contractors. Long term benefits of the Project include the ongoing reliable electrical services and the ability to serve existing and new local load growth.

The installation of the Xcel and Peoples distribution line would not indirectly affect environmental justice or socioeconomic concerns.

Significance: Socioeconomic and environmental justice impacts are expected to be negligible.

[59] USCB. 5-Year Estimates Detailed Tables File# B03002 and File #B17017. Retrieved December 2, 2024, from https://data.census.gov/.

Mitigation

Because impacts to socioeconomics will be generally short-term and beneficial and because no Environmental Justice communities would be affected, no mitigation is proposed.

4.5. Human Health and Safety

4.5.1.1. Electric and Magnetic Fields

Electricity produces two types of fields – electric and magnetic fields. The fields are typically referred to as Electric Magnetic Fields (EMF).

Electric Fields

Electric fields (EF) are created when any device or wire is connected to a source of electricity. Even if a current is not flowing or the connected device is not on, an electric field is still present. The EF is the physical electrical field that surrounds electrically charged particles. The magnitude of the electric field is dependent on the voltage potential and the distance from the source. Electric fields produced by transmission lines with high voltage have minor abilities to penetrate buildings or skin and are easily shielded by trees, walls, and fences.[60] Minnesota has a state standard for electric fields associated with transmission line. Lines must have an electric field level of more than 8 kV/m at one meter above ground.

Magnetic Fields

Magnetic fields (MF) are only created when there is an electric current. The magnitude of the magnetic field is directly proportional to the current flow through a wire or electric line. If the current flow increases, so does the magnetic field. However, magnetic fields become weaker as the distance from the source increases. MF do pass through most non-metallic materials which makes them harder to shield. When MF is referenced, it is typically illustrated in units of Gauss (G) or Tesla (T). All devices that use electric current, from appliances, to the wiring in homes and businesses produce MF when the electric current is flowing. The typical background environmental or ambient MF levels are often around 1 to 3 milliGauss (mG).[61] **Figure 6** provides a graphic of the spectrum of different MF emitting appliances and infrastructure.

With the actual power flow on a transmission line will vary throughout the day depending on the electricity demand.; The MF level will also vary in the same way based on electricity demand. The highest transmission line MF level would occur when the HVTL is at peak demand, close to the line, but would decrease rapidly when moving away from the transmission line.[62] There are no federal standards or state standards in Minnesota for MFs.

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[60] Public Service Commission of Wisconsin. Electromagnetic Field. Retrieved January 12, 2025, from https://psc.wi.gov/Documents/Brochures/EMF.pdf.

[61] Public Service Commission of Wisconsin. EMFs. Retrieved January 14, 2025, from https://psc.wi.gov/Documents/Brochures/EMF.pdf.

[62] National Institute of Environmental Health Sciences. Electric & Magnetic Fields. Retrieved January 15, 2025, from https://www.niehs.nih.gov/health/topics/agents/emf.

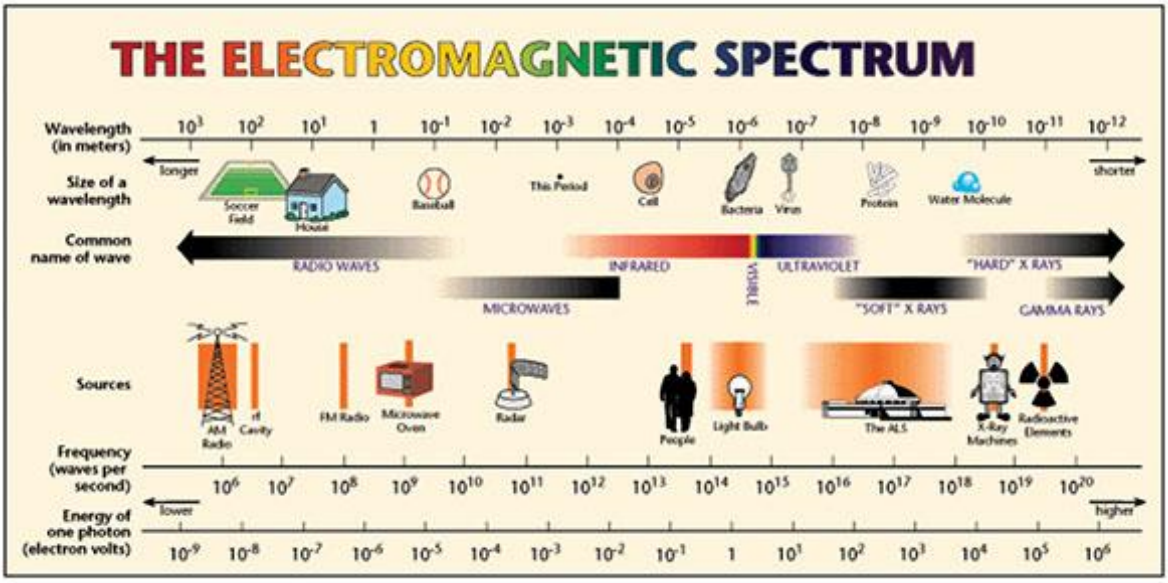

Figure 6. Overview of Magnetic Field Profile.

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operation (Long term)

Size: N/A

Uniqueness: Common

Location: Common throughout the Project area.

Context: Electric and magnetic fields are expected to be present when the transmission line is in operation. The proposed Project will have varying levels of EF and EM depending on the time of day but even at peak demand, both EF and MF for the Project is expected to be below the MQEB accepted levels. For EF, the Applicant estimates the line to operate at 1.2 kV/m at one meter above ground.[63] **Figure 7** provides what the 161 kV Single Circuit Line EF profile will look like from centerline of the transmission line outwards.[64]

The typical MF magnitude associated with the Project is expected to be well below the calculated highest intensity when the powerline will be at its peak rated load. Based on the average historic load with a line current of 541 Amps, the Project MF would be at a maximum of 43.67 mG when under the center of the alignment, with it dissipating rapidly moving outwards, being at 17.32 mG and 19.43 mG at 50 feet out from the centerline. Even at the peak rated load for the Project at 2,000 Amps, the maximum MF would be 199.06 mG at the centerline, dissipating to 69.66 mG and 78.83 mG at 50 feet from the center of the alignment.[65] **Figure 8**

[63] Dairyland's RPA.
[64] Dairyland's RPA.
[65] Dairyland's RPA.

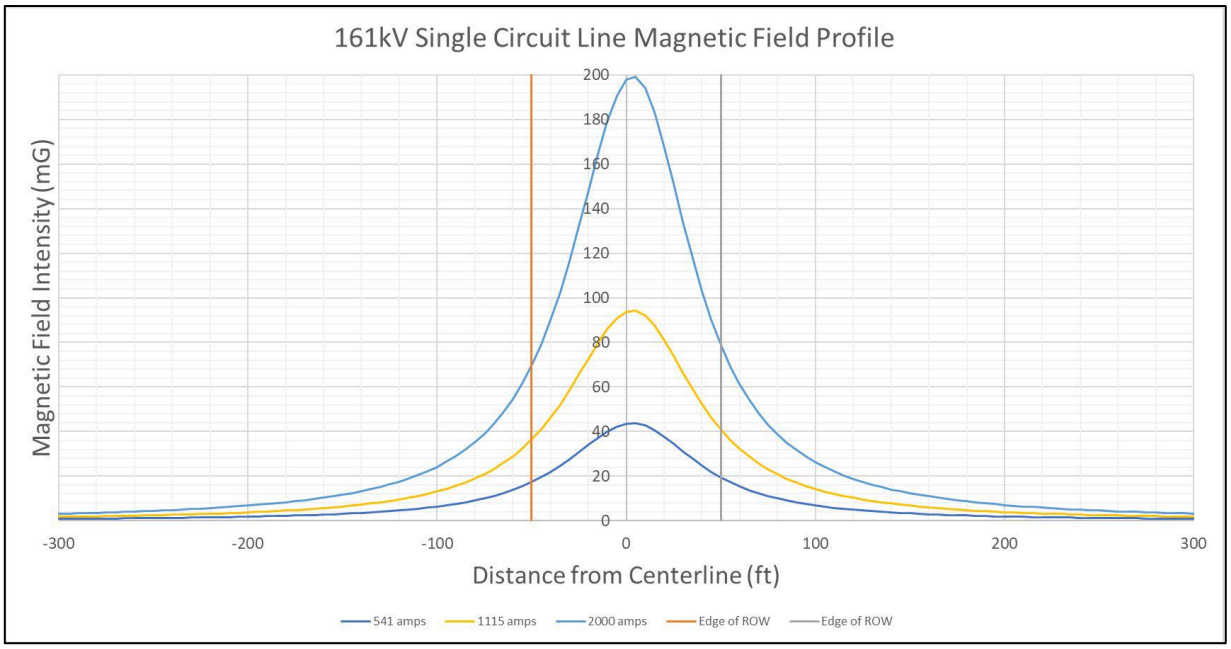

Figure 7. 161 kV Single Circuit Line Electric Field Profile.

below provides the profile of MF for a 161 kV Single Circuit Transmission Line from the alignment outwards.[66]

The installation of the Xcel and Peoples distribution line underground will not directly or indirectly generate MF or EF.

Significance: EF levels will be within the state standards of 8 kV/m and will be the same no matter the route selected for the Project. Robotic dairy operations, agricultural operations, commercial business, and residential properties near the proposed route expressed concerns about EMF. Several EMF studies have been completed in the 25+ years, with the first study completed in 1979. The Wisconsin Public Utility Commission in 2008 compiled and reviewed several of these studies. Although each of these studies had different controls, collectively, the study results have not been able to establish a direct link between EMF exposure and cancer or other health effects including cellular or DNA damage.[67]

In addition to EMF studies completed on human health effects, there have been several studies on the effects of EMF on livestock, three of which are summarized in the following discussion. These studies have provided little to no scientific evidence supporting claims that EMF has negative effects on animals, including dairy cows. A clinical study conducted from 1977-1979 by Americans H.E. Amstutz and D.B. Miller on the health of beef cattle, dairy cows, sheep, pigs, and

[66] Dairyland's RPA.
[67] Wisconsin Public Service Commission. 2008. EMF – Electric & Magnetic Fields. Retrieved January 5, 2025, from https://www.rd.usda.gov/sites/default/files/UWP_WI64-Dairyland_CapXHRLC_FEIS-AppH.pdf.

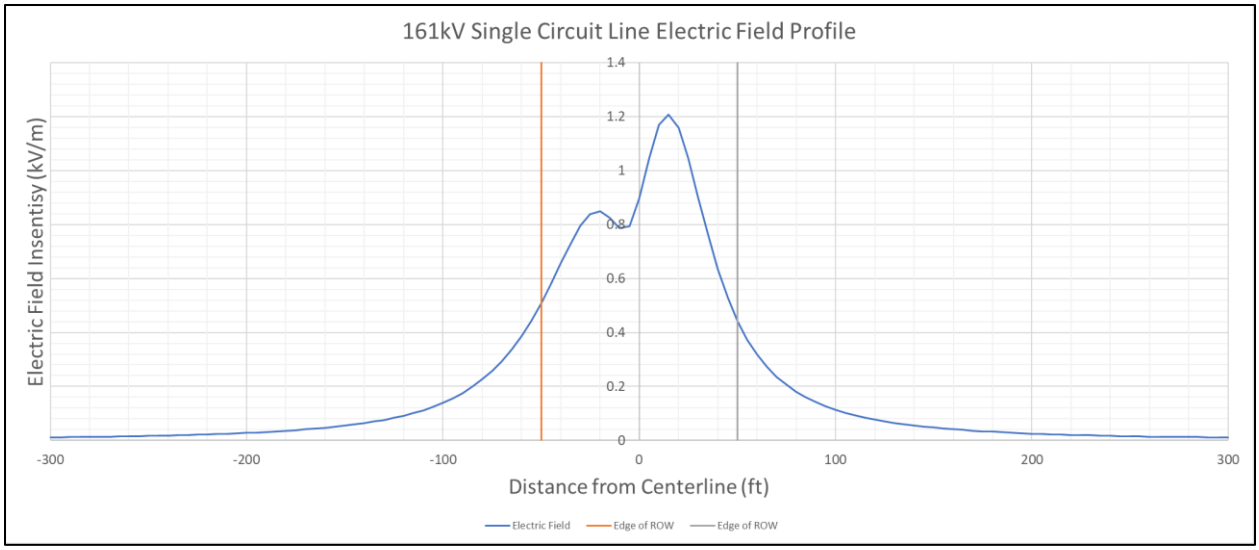

Figure 8. 161 kV Single Circuit Transmission Line Magnetic Field Profile.

horses on 11 farms located near a 765 kV transmission line. The authors concluded that the power line had no effect to health, behavior, or productivity of the livestock.[68]

Similarly, in a study conducted in 1996, 16 Holstein cows that were lactating were exposed to a vertical EF of 10kV/m. This study was designed as "worst-case scenario," where cows would be continuously standing directly under a 735 kV AC line with the maximum load at approximately 2,000 amps. The results of this study showed increased progesterone and dry matter intake, and a subsequent increase in milk fat, while other physiological parameters remained the same.[69] A follow-up to this study was completed in 2002, that had similar results where there was little physiological change in the dairy cows; however, an increase in milk yield was noted with no effects to the milk components observed.[70]

More recently in 2020, the New Mexico State University conducted research on more than a dozen existing EMF clinical studies to date (ranging from 1985 to 2018) that "the body of scientific evidence studying the biological effects of exposure to EMFs on both human and livestock subjects has concluded that there is not an increased risk of adverse health events when exposure occurs to extremely low-frequency EMFs, such as those associated with power transmission and distribution lines". It was noted though that continued research of EMF on livestock would require "…prolonged and costly projects that will need to look at multi-generational effects of exposure and whether the effects are only biological or if adverse health events can be scientifically documented.[71]

[68] Hydro-Québec, 1999.

[69] Burchard, J.F., D.H. Nguyen, L. Richard, and E. Block. 1996. Biological effects of electric and magnetic fields on productivity of dairy cows. *Journal of Dairy Science,* 79, 1549–1554. Biological Effects of Electric and Magnetic Fields on Productivity of Dairy Cows

[70] Effect of Electric and Magnetic Fields (60Hz) on Production, and Levels of Growth Hormone and Insulin-Like Growth Factor 1, in Lactating, Pregnant Cows Subjected to Short Days - Journal of Dairy Science

[71] Electromagnetic Fields and Livestock Production | New Mexico State University - BE BOLD. Shape the Future.

Based on the current study findings, residential as well as dairy and other livestock operations that exist near or are crossed by the Project are unlikely to experience EMF-related impacts.

Mitigation

With no EMF impacts anticipated, Project mitigation measures have not been proposed.

4.5.1.2. Implantable Medical Devices

Research has shown that the magnetic fields associated with high-voltage transmission lines do not reach levels high enough to interfere with implantable medicals devices. However, electric fields generated from high-voltage transmission lines can reach levels high enough to induce body currents to cause interference. Examples of implantable medical devices that may be impacted by electric fields associated with transmission lines are older pacemakers and defibrillators. Manufacturers of these devices have indicated that electric fields below 6 kV/m are not likely to cause interferences that would affect the operation of such devices.[72] A study using of magnetic fields typical of powerline frequencies and 245 patients with permanent pacemakers, published in the Journal of the American College of Cardiology in 2005, found low interaction by magnetic field with patients with conventionally programmed pacemaker models and that the risk of interference was negligible in patients with the bipolar sensing programming.[73]

A test ran in 2013 by a group of Finnish medical and science professionals, with the help of eleven volunteers with pacemakers that were programmed in normal clinically selected settings with bipolar sensing and pacing configurations, tested how exposure to electromagnetic interference caused by common environmental sources including high voltage transmission lines may affect these pacemakers. At the conclusion of this study, none of the pacemakers experienced interference from these exposures. The test illustrated that modern pacemakers are protected from this external inference. [74]

A review of the American Heart Association list of devices that may interfere with implantable cardioverter defibrillators and pacemakers did not identify high voltage transmission line and noted that low voltage power lines pose little risk.[75]

Potential Impacts

ROI: 500 feet off of alignment

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[72] High Power Voltage and Pacemakers. 1996. Medtronic Pacing Technical Services.

[73] Alexandre Trigano, Olivier Blandeau, Martine Souques, Jean Pierre Gernez, Isabelle Magne, Clinical study of interference with cardiac pacemakers by a magnetic field at power line frequencies, Journal of the American College of Cardiology, Volume 45, Issue 6, 2005, Pages 896-900.

[74] National Institute of Health. Testing of Common Electromagnetic Environments for Risk of Interference with Cardiac Pacemaker Function.(2013). Retrieved January 15, 2025, from https://pmc.ncbi.nlm.nih.gov/articles/PMC3791084/#:~:text=In%20conclusion%2C%20mobile%20phone%20base,for%20patients%20with%20bipolar%20pacemakers.

[75] American Heart Association. Devices That May Interfere with ICDs and Pacemakers. 2024. Retrieved January 23, 2025, from https://www.heart.org/en/health-topics/arrhythmia/prevention--treatment-of-arrhythmia/devices-that-may-interfere-with-icds-and-pacemakers.

Duration: Construction (Short term) and Operation (Long term)

Size: N/A

Uniqueness: N/A

Location: Localized

Context: Implantable medical devices are assumed to be in the surrounding area at unknown times when the transmission line is in operation. EMF interference from electrical line operation is unlikely, though possible depending on the age of the device. The line is expected to operate at a voltage level much lower than what is typically needed to interfere with the operation of implantable medical devices.

The potential for indirect impacts from the addition of the Xcel and Peoples distribution lines are not anticipated to affect implantable medical device users.

Significance: Although the Project may cross or pass near residential, agricultural, and commercial areas where individuals with implantable medical devices may reside, the Project is expected to operate well below the 6 kV/m level of concern for individuals with these devices. Therefore, potential impacts to implantable medical device users are not expected (negligible).

Mitigation

Since the likelihood of EMF impact on implantable medical devices is unlikely, mitigation measures are not proposed. The transmission line project will be designed in compliance with local, state, NESC, and Dairyland standards which dictate clearance to ground, crossing utilities, and buildings, as well as strength of materials and ROW widths.

4.5.1.3. Stray Voltage

Voltage that exists between the neutral wire of the service entrance and grounded objects in buildings is defined as "stray voltage." The USDA definition of Stray Voltage is" … small voltage (less than 10 volts) measured between two points that can be simultaneously contacted by an animal. Because animals respond to the current produced by a voltage and not to the voltage directly, the source of the voltage must be able to produce current flow greater than the threshold current needed to elicit a response from an animal when an animal, or an equivalent load, contacts both points."[75] A more simplistic definition is from the Wisconsin Public Service Commission (WPSC) "Stray voltages are low-level voltages present across points (for example, drinking cup to rear hooves) in which a current flow is produced when an animal simultaneously comes into contact with them."[76]

Unlike distribution lines which are the primary electrical system that connects to a secondary farmstead's electric system, transmission lines do not independently create stray voltage, because they do not connect to businesses or residences as they do with distribution line. However, transmission lines can induce a current on transmission/distribution circuits and pipelines that are parallel and directly under the transmission line due to the electric field

[76] Wisconsin Public Service. Answer to Your Stray Voltage Questions: Backed by Research. Retrieved January 20, 2025, from https://www.wisconsinpublicservice.com/partners/agriculture/stray-voltage/pdf/stray-voltage.pdf.

around the energized conductors. Induced current and voltage may affect structures and other facilities that are made of conductive material located in close proximity to the electric transmission lines. The NESC requires increased clearances or a decrease in electric field to limit the induced current due to electrostatic effects to 5 mA, if the largest anticipated truck, vehicle, or equipment under the line were short-circuited to ground. The 5 mA threshold is used as a conservative measurement for "let-go" current.[77]

Several studies have been conducted on dairy livestock herds and stray voltage to determine the short- and long-term effects on dairy cattle exposed to stray voltage (**Figure 9**).[75] Investigations by WPSC and the University of Wisconsin Madison had the following findings:

> "*The data show that cow contact current is dependent on many physical factors stemming from both on-farm and off-farm electrical power systems. Specific measurement of (stray voltage) on each farm is required to determine the potential impact on cows on that farm. Because of the wide variation in the data, gross indicators—such as grounds per mile, secondary and primary neutral to reference voltages, etc.—are not good predictors of cow contact currents."*[75]

The WPSC commissioned a stray voltage study during the summer of 1997. The study produced the following conclusions:

> *""We have not found credible scientific evidence to verify the specific claim that currents in the earth or associated electrical parameters such as voltages, magnetic fields and electric fields, are causes of poor health and milk production in dairy herds."*
>
> *"At the present time, there is no basis for altering the PUC-approved standards by which electric utilities distribute power onto or in the vicinity of individual dairy farms."*

The WPSC concluded in their study on stray voltage that it "is rarely strong enough to affect the behavior or production of dairy cattle."[75]

What was found with these studies is the cause of stray voltage on dairies typically stems from errors or issues with the electrical distribution system or faulty equipment in the dairy.

Even with the concerns of dairy cows being shocked by stray voltage, as noted in the WPSC research, stray voltage is rarely strong enough to affect the production or behavior of dairy cows. It has been found that cattle/cows can become aware of the presence of an electric current when it is between 1 and 3 mA. No milk production loss has been found to occur in this range. Moderate behavioral changes may occur in cattle that are in the presence of a 3 to 6 mA current. Animals may become a greater challenge to manage when the current exceeds 4 mA. Although changes in behavior may occur, research has shown no significant changes in feed/water consumption or milk production for dairy cattle that are near a 2 mA electric current or less.[75]

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[77] The definition of "let-go" current: This is the current level at which humans lose muscle control; the electricity causes muscles to contract until current is removed. (https://www.ecmweb.com/content/article/20893758/the-basics-of-electric-shock).

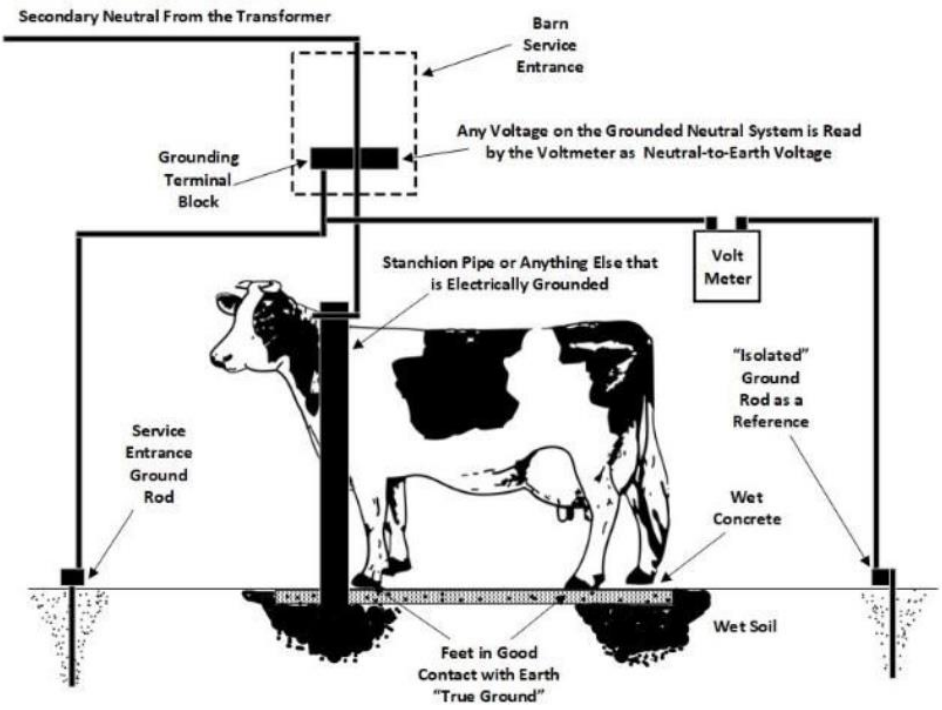

Figure 9. Diagram of current flow from stray voltage through cow's body[78]

Similar results were determined in a literature review completed in 2012 of 46 research trials on groups of cows exposed to varying levels of voltage and/or current (some of which were same experiment but exposing cows at different levels of voltage or current) found that,"… none of these trials or experiments (some using aggressive exposure of cows to mastitis organisms) showed a significant effect of voltage/current exposure on somatic cell count or the incidence of mastitis…This body of research indicates that while exposure to stray voltage at levels of 2 V to 4 V may be a mild stressor to dairy cows, it does not contribute to increased somatic cell count or incidence of mastitis or reduced milk yield." [79]

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operation (Long term)

Size: N/A

Uniqueness: N/A

Location: Localized

Context: Stray voltage may occur when the transmission line is in operation. Buildings or structures made of conductive materials that are parallel to and immediately below the line may

[78] Watson, J.A., Stray Voltage in Dairies. University of Florida, IFAS Ext. Retrieved January 23, 2025, from https://edis.ifas.ufl.edu/publication/AE019.
[79] Reinemann DJ. Stray voltage and milk quality: a review. Vet Clin North Am Food Anim Pract. 2012 Jul;28(2):321-45. doi: 10.1016/j.cvfa.2012.03.008. Epub 2012 Apr 28. PMID: 22664211.

experience stray voltage. However, no buildings, structures, or residences are expected to be within those parameters.

Comments received during the scoping meetings including concerns with robotic dairies and stray voltage regarding concerns that cows will get shocked when they are being milked in the rotary milking parlor. If cows are shocked while in the parlor, they are not as willing to enter the parlor following the incident. Testing for stray voltage by a trained professional is recommended to identify if stray voltage exists at the dairy.

Significance: Stray voltage is not expected to occur, although structures made of conductive materials that are close to the transmission line could attract stray voltage. As noted earlier in this section, stray voltage from overhead power typically occurs from distribution lines, rather than transmission systems, but may also be due to faulty electrical systems. Impacts are anticipated to be negligible.

Mitigation

Baseline stray voltage conditions will be assessed prior to construction, around final route locations where dairy facilities are located. This work will also include identification and evaluation of conductive structures. Landowners with structures or facilities within 500 feet of the transmission lines are recommended to contact their local electric service provider to discuss the situation and encourage on-site investigations. Appropriate design techniques such as cancellation, separation, and grounding of non-energized conductors or conductive objects will be utilized to minimize the potential for induction issues. If effects to dairy operations which suggest the presence of stray voltage after the Project has been energized, the Applicant will be required to investigate to determine if effects occurring from proposed Project.

4.6. Public Services and Infrastructure

Public services are those services provided by the government or another official body to benefit all people, which include transportation, emergency services, and utilities. Construction activities can temporarily disrupt these services and infrastructure through traffic restrictions and utility outages. Utility infrastructure is also privately owned within the project area with many owning their own wells and sewage treatment systems.

4.6.1.1. Airports

Airports have defined safety zones based on several factors including: length of runway, type of aircraft, and approach procedures used by aircraft. Due to their height, transmission lines can impact the safe operation of airports if they infringe on these designated safety zones. The Winona Municipal Airport (Max Conrad Field) is the closest airport, located 18 miles southeast of the Project. The Red Wing Regional Airport is over 30 miles northwest in Hager City, Wisconsin.

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operation (Long term)

Size: N/A

Uniqueness: N/A

Location: N/A

Context: The only airport within the ROI is the Winona Municipal Airport located 18 miles southeast. The potential for effects from the Project would not be noticeable due to the distance between the airport and proposed Project.

The installation of the Xcel and Peoples distribution line would not indirectly affect any airport operations.

Significance: The APR and RSAs do not cross any of the designated safety zones for this airport, and the Project is not expected to impact any airport activities.

Mitigation

The Applicant has initiated consultation with the FAA and will complete a Part 7460 Airport Obstruction Evaluation once a route is determined to confirm that no impacts to aviation will occur. No impacts are expected due to the distance to the nearest airport.

4.6.1.2. Emergency Services

Emergency agencies that serve the immediate area include Wabasha County Emergency Management, Wabasha County Sheriff, and various municipal and private medical centers (**Table 12**).

Table 12.Emergency Response.

Emergency Response Facility	Address	Distance from Project Area	Contact Phone Number
Wabasha County Emergency Management (CodeRed)	411 Hiawatha Drive E, Wabasha	5.8 miles northeast of the Project area	N/A
Wabasha County Sheriff's Department	848 17th Street E, Suite 1, Wabasha	4.9 miles northeast of the Project area	651-565-3361
Wabasha Fire Department	113 Hiawatha Drive, Wabasha	5.8 miles northeast of the Project area	651-565-4568
Wabasha Ambulance Service	129 Hiawatha Drive, Wabasha	5.8 miles northeast of the Project area	911
Gundersen St. Elizabeth's Hospital	1200 Grant Boulevard W, Wabasha	6.5 miles northeast of the Project area	651-565-4531
Kellogg Fire Department	125 S. Dodge Street, Kellogg	0.5 miles north of the Project area	507-767-3044

Emergency Response Facility	Address	Distance from Project Area	Contact Phone Number
Plainview Fire Department	330 1st Avenue SW, Plainview	4.3 miles southwest of the Project area	507-534-3242
Plainview Police Department	241 W Broadway, Plainview	4.3 miles southwest of the Project area	507-534-2441
Mayo Clinic Ambulance Service	110 3rd Street SW, Plainview	4.3 miles southwest of the Project area	507-288-2407

Impacts to emergency services from transmission lines generally occur due to interference with emergency communication systems or traffic delays.

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Localized

Context: Affects to Emergency services are anticipated to be negligible by the Project. The installation of the Xcel and Peoples distribution line would not indirectly affect emergency services.

Significance: Potential impacts to electronic systems due to the Project are discussed in Section **4.5.1.1**. No impacts to emergency communication systems are anticipated. Temporary impacts to road during construction may cause traffic delays and disrupt emergency responses. However, these impacts are expected to be minimal and manageable through traffic control standard practices.

Mitigation

The local emergency responders will be contacted prior to construction to discuss measures to avoid any disruptions to emergency services.

4.6.1.3. Roads, Highways and Railroads

Sixteen roadways intersect or parallel the route alternatives: 12 township roads, two county roads, one state highway, and one U.S. Highway (**Table 13**). County Road 84, which parallels and crosses the APR, has been identified for possible expansion and curve realignment by the Wabasha County Highway Department in the next eight to ten years.

Table 13. Roads and Highways within the Project Area.

Highway/Road Name	Jurisdiction	Parallel or Intersect?	Traffic Volumes[80],[81]	Route and Alternatives
565th Street	Township	Intersect	Not Available	APR
215th Avenue	Township	Parallel	Not Available	APR
State Highway 42	State	Parallel and Intersect	Not Available	All
County Road 14	County	Parallel	460	RSA-B, RSA-C, RSA-D, RSA-EAA-1, RSA-EAA-2
575th Street	Township	Intersect	Not Available	APR, RSA-B, RSA-C, RSA-D, RSA-EAA-1, RSA-EAA-2
578th Street	Township	Intersect	Not Available	APR
580th Street	Township	Intersect	Not Available	APR, RSA-B, RSA-C, RSA-D, RSA-EAA-1, RSA-EAA-2
590th Street	Township	Intersect	Not Available	APR
595th Street	Township	Intersect	Not Available	RSA-EAA-1, RSA-EAA-2
608th Street	Township	Intersect	Not Available	APR, RSA-GAA-1, RSA-GAA-2
615th Street	Township	Intersect	Not Available	APR

[80]MnDOT. Trunk Highways. Retrieved December 18, 2024, from https://www.dot.state.mn.us/traffic/data/maps/trunkhighway/2018/counties/2018_Publication_Traffic_Volumes_-_Wabasha_County.pdf.

[81] MnDOT. Maps. Retrieved December 18, 2025, from https://mndot.maps.arcgis.com/apps/webappviewer/index.html?id=7b3be07daed84e7fa170a91059ce63bb.

Highway/Road Name	Jurisdiction	Parallel or Intersect?	Traffic Volumes[80],[81]	Route and Alternatives
U.S. Highway 61/ Great River Road	State/U.S.	Intersect	4,241 (Seq. 5984)	APR
161st Avenue	Township	Intersect	Not Available	APR
159th Avenue	Township	Intersect	Not Available	APR
County Road 84	County	Parallel and Intersect	235	APR
145th Avenue	Township	Intersect	Not Available	APR

The state routing policy for transmission lines prefers to consolidate transmission with existing infrastructure such as road rights-of-way. The Commission is required to consider right-of-way sharing when determining to issue a permit for a transmission line per Minn. R., part 7850.4100, subparts H and J.

The Canadian Pacific Railroad is crossed just past MP 10 and is located adjacent to the Project area for approximately half a mile. No other railroads are located within the Project area.

Potential Impacts

ROI: 1 mile

Duration: Construction (Short term)

Size: N/A

Uniqueness: Common

Location: Common throughout Project area.

Context: The Applicant consulted with MnDOT and the Wabasha County Highway Department during the application process to discuss potential impacts to roadways along the route. MnDOT did not identify any planned projects that would be impacted by the Project. Because the Wabasha County Highway Department plans to modernize County Road 84 in the future, the APR was placed in its current location to reduce conflicts.

In addition, roadways and highways maybe temporarily impacted by the Project during the construction and maintenance phases. Impacts may include temporary traffic delays, road closures, and detours within the Project area.

There are no expected railroad interruptions during construction or maintenance of the transmission line. Transmission poles will be located outside of railroad ROW.

The installation of the Xcel and Peoples distribution line could indirectly affect roads and highways, though construction would not affect roadways, and traffic delays would be minimal.

Significance: Impacts are expected to be negligible to minor with implementation of mitigation measures.

Mitigation

The following mitigation measures should be implemented to avoid impacts to roadways:

- Coordinate with affected road authorities to schedule large material/equipment deliveries to avoid periods of high traffic volumes.
- When appropriate, pilot vehicles will accompany the movement of heavy equipment.
- Use traffic control barriers and warning devices when appropriate.
- Coordinate with the Canadian Pacific Railroad and obtain any permits that may be necessary for work within or crossing railroad ROW.

4.6.1.4. Utilities and Existing Infrastructure

Public utilities are at risk of damage or interference when they are in close proximity to transmission lines. Construction and operation of planned utility infrastructure could also be precluded by an existing transmission line. Identifying the existing utilities and infrastructure near the proposed Project allows mitigation efforts to take place to minimize potential impacts. Utilities identified near the proposed transmission line include a pipeline, cell phone tower, electrical distribution lines, propane services, water and septic systems, and other transmission or distribution lines and substations.

Other existing infrastructure includes the Canada Pacific Railroad, which is located beginning at MP 10.0 to MP 10.5. The proposed APR crosses the Railroad at MP 10.0 and is parallels for approximately 0.6 miles. (**Appendix B, Map 10**).

Potential Impacts

ROI: 500 feet

Duration: Construction (Short term) and Operation (Long term)

Size: N/A

Uniqueness: Common

Location: Common throughout Project area.

Context: Several utilities will be crossed during the construction of the proposed transmission line, where the potential for impacts may occur as a result of these crossings. Water wells and septic systems have the potential to be impacted if the transmission line structures impede the utilities. It is anticipated that two electric lines will be crossed, which are the Capx2020 and a proposed Xcel Energy 345kV.[82] (**Appendix B, Map 2**) Several utilities or infrastructure owned by DirectTV, MidCo, Xcel Energy, and People's Energy Cooperative have the potential to be

[82] MPUC. Minnesota Wind Farm and Solar Projects. Retrieved January 5, 2024, from https://minnesota.maps.arcgis.com/apps/webappviewer/index.html?id=af93f569169a435cbe07f741c340fedb.

crossed.[83] Propane services are provided by local companies and may be encountered during the construction process. The APR will cross and parallel the Canadian Pacific Railroad line.

The installation of the Xcel and Peoples distribution line would not indirectly affect utilities and existing infrastructure.

Significance: Existing utilities and infrastructures are not significant to the proposed transmission line, because the line is being relocated to allow room for other builds to take place without installing new structures. The Applicant will coordinate with Canadian Pacific Railroad and will make efforts to mitigate and design accordingly to best avoid potential impacts to existing utilities and infrastructure. Impacts are anticipated to be negligible.

Mitigation

The Applicant will coordinate with any potentially impacted utility company and the Canadian Pacific Railroad. In addition, the Project will design accordingly to minimize impacts to existing utilities and infrastructure. Impacts are not anticipated but may occur. No other mitigation measures are proposed.

4.7. Land-Based Economies

Transmission lines have the potential to impact land-based economies, as transmission lines and poles are a physical presence on the landscape which can prevent or otherwise limit use for other purposes. For safe operation of the line, buildings and tall growing trees are not allowed in HVTL ROWs, while many agricultural uses can continue within the same space. These limitations can create impacts for land-based economies that include commercial activities, agricultural production, and forestry. Project-related impacts to land-based economies are anticipated to be minimal. Impacts to forested lands and to forestry operations are also anticipated to be minimal along most of the APR and RSA-A through RSA-F, but some impacts are assessed for sections of the APR and RSA-GAA-1 and RSA-GAA-2. No impact to mining activities is anticipated, as there are no identified gravel pits or mines within the anticipated alignments.

4.7.1.1. Agriculture

According to the 2017 USDA Census of Agriculture, Wabasha County has 809 individual farms with an average farm size of 285 acres and farmland covers approximately 230,800 acres (66 percent) of the county. The market value of agricultural products sold was over $186 million in 2017.[84]

The most common agricultural land uses in the APR and RSAs consist of row-crop fields used in commodity crop production, pasture, and hay fields. The Project is compatible for future and ongoing use as pasture, hay, or other crop cultivation. The APR will cross about 11.2 miles of

[83] Minnesota Geospatial Commons. Minnesota's Service Territories. Electric Utility Service Areas. Retrieved January 5, 2025, from https://minnesota.maps.arcgis.com/apps/webappviewer/index.html?id=95ae13000e0b4d53a793423df1176514/.

[84] USDA – National Agricultural Statistic Service. Retrieved November 15, 2024, from https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/Minnesota/st27_2_0001_0001.pdf.

agricultural land, which conservatively is 94.5 acres (within the 100-foot ROW).[85] The amount of agricultural land crossed by the APR and RSAs is listed in **Table 14**. There will be some loss of production where poles are installed within areas used for agricultural use. Accordingly, there will be minor, but largely negligible impacts to pasture, hay, and cultivated lands. There is one organic farm along the APR near MP 2.9 and the eastern end of RSA-E, and RSA-F. However, the organic operation is not crossed by the APR and RASs.[86],[87]

Table 14. Summary of Agricultural Land.

Route Segment Alternatives	Cultivated/Row Crop (acres)	Pasture/Hay
APR	68.5	25.1
RSA-AAA-1	22.9	0.4
RSA-AAA-2	24.9	0.4
RSA-B	11.3	2.2
RSA-C	11.8	2.0
RSA-D	14.7	1. 6
RSA-EAA-1	21.3	0.9
RSA-EAA-2	22.0	0.9
RSA-F	21.3	0.2
RSA-GAA-1	3.6	2.7
RSA-GAA-2	4.4	1.6

Several diary operations – with automated and robotic milking systems – are located within or adjacent to the APR between MP 2.4 and MP 3.1. Impacts from EMFs and stray voltage on these operations are discussed in Sections **4.4.1.4, 4.5.1.1** and **4.5.1.3**.

Potential Impacts

ROI: ROW

[85] USGS GAP Analysis Project. Retrieved November 30, 2025, from https://www.usgs.gov/programs/gap-analysis-project/science/land-cover-data-download.
[86] Minnesota Department of Agriculture. Organic Farm Directory. Retrieved November 31, 2024, from https://www.mda.state.mn.us/organic-farm-directory-county.
[87] Agricultural Marketing Service. Organic Farms. Retrieved December 2, 2024, from https://organic.ams.usda.gov/integrity.

Duration: Construction (Short term), Operation (Long term), and Permanent. Some agricultural land may be temporarily removed from production during transmission line construction. Construction of the proposed transmission structures will require repeated access to structure locations for pole installation and line-stringing. Equipment used in the construction process will include backhoes, cranes, boom trucks, and assorted small vehicles. Vehicle operation on adjoining farm fields can cause rutting and soil compaction, particularly during springtime and other wet periods. Permanent impacts will occur where transmission structures are placed.

Size: ATWS will be needed for temporary Project staging and laydown yards, which will provide space to store material and equipment and ATWS along the ROW.

Uniqueness: Common

Location: Common throughout Project area.

Context: Short- and long-term financial impacts (such as crop losses) can be mitigated through easement agreements. All routing options will convert a minimal amount of prime farmland and agricultural land to an industrial use. Removal of agricultural land is not expected to negatively affect the general farm community within the route width. Once construction is complete, agricultural production within the ROW will resume. Localized impacts will be of a small size and affect prime farmland – an unique resource that is common to the APR and all RSAs. Impacts can be mitigated through implementation of appropriate BMPs. Conversion of agricultural land associated with the Kellogg Substation can be mitigated by purchase or easement agreements.

It is anticipated that ATWS on property adjacent to the ROW and on private property will be needed. The Applicant will work with local landowners to lease the space by agreement with the respective landowner(s), remove and properly dispose of all material and debris, and repair all damages and perform restoration, as necessary.

As discussed in Sections **4.4.1.4, 4.5.1.1**, and **4.5.1.3**, the Project is not expected to significantly affect agricultural operations.

The installation of the Xcel and Peoples distribution line would not indirectly affect the agricultural sector.

Significance: Impacts are anticipated to be minor during the construction and operation phases of the Project.

Mitigation

To minimize the amount of farmland impacted, local roads will be used for moving equipment and installing structures. Where local roads cannot be utilized, movement will be restricted to the extent of the ROW. If movement outside the ROW is necessary, permission will be requested and any damages incurred through project construction will be paid to the landowner. Construction will be scheduled during periods when agricultural activity (e.g., planting and harvesting) will be as limited as possible. Otherwise, the landowner will be compensated accordingly. Any ruts that may occur during the construction process will be filled, compacted soils will be loosed, and any crops or vegetation disturbed will be corrected with landowner approved seeds. Any other miscellaneous structures (such as fences and gates) that are removed or damaged will be promptly repaired or replaced.

4.7.1.2. Forestry

The APR and RSAs do not cross any DNR fee surface lands that are managed as part of a State Forest. Based on review of forested areas using aerial photographs, there are approximately 14.4 acres of trees within the 100-foot-wide ROW of the APR to construct and operate the Project. **Table 15** summarizes the acreage of forest within each RSA. The ROW will need to be maintained for the safe and reliable operation of the transmission line and therefore, woody vegetation that is removed or cut back within the 100-foot-wide ROW will not be allowed to re-grow to heights that present a concern for transmission line safety.

Table 15. Summary of Forested Areas.

Route and Route Segments	Forested (acres)	Map(s)
APR	14.4	2-12
RSA-D	1.4	5
RSA-GAA-1	6.2	8
RSA-GAA-2	8.1	8

Potential Impacts

ROI: ROW

Duration: Construction (Short term) and Operations (Long term)

Size: See **Table 15.**

Uniqueness: Common to unique

Location: Common throughout Project area, but Red Oak-White Oak Forest community is present within RSA-GAA-2 alignment.

Context: Because the Project will largely be collocated and parallelled with existing utility and road ROWs, there will be minimal incremental impacts to forested areas from Project construction and maintenance. No existing logging or milling operations would be affected by the Project.

The installation of the Xcel Energy and Peoples distribution line would not indirectly affect forestry resources or forestry operations, as it would be limited to the public ROW along local and state roads.

Significance: Over most of the APR and RSA-A through RSA-F, forestry impacts are expected to be negligible. From MP 8.5 to MP 9.5 on the APR and RSA-GAA-1 and RSA-GAA-2, impacts are expected to be minor to moderate with implementation of mitigation measures and BMPs.

Mitigation

Mitigation for potential forest resource impacts would include: 1) following forest edges to minimize habitat fragmentation; 2) compensation for removal of vegetation in the ROW will be offered to landowners during easement negotiations; and 3) landowners will be given the option to keep any of the timber cut within the easement area. A Vegetation Management Plan has been developed for this Project to manage the ROW and restore any disturbed areas to a natural state.[88] This plan is an enforceable provision of the final Route Permit.

4.7.1.3. Mining

There is no mining activity within the APR or RSAs. Review of the DNR's Mineral Resource data did not locate any mines within 2 miles of the Project.[89] Several sand and gravel quarries are located in Wabasha County, with the closest mines located outside of Wabasha.[90]

Potential Impacts

ROI: Right-of-way

Duration: The Project would not affect any current or future mining operations.

Size: N/A

Uniqueness: The Project would not affect any current or future mining operations.

Location: N/A.

Context: There are no existing mines in the route width of any routing options. The installation of the Xcel and Peoples distribution line would not indirectly affect any mining operations.

Significance: Impacts would be negligible.

Mitigation

As impacts are negligible, no mitigation is proposed.

4.7.1.4. Tourism and Recreation

Tourism and Recreation are a significant contributor to the economy of Wabasha County. Tourist destinations near the Project include the Richard J. Dorer Memorial Hardwood State Forest, the Zumbro River, the Mississippi River, McCarthy Lake State WMA, Kellogg-Weaver Dunes State Natural Area (SNA), the Upper Mississippi River National Wildlife and Fish Refuge, the U.S. Highway 61 Scenic Byway, and others. Popular activities include fishing, boating,

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[88] MDOC efiling. Retrieved December 5, 2025, from https://efiling.web.commerce.state.mn.us/documents/%7B6066818E-0000-C8CD-B2BD-BD4481CD0FB7%7D/download?contentSequence=0&rowIndex=74.

[89] MDNR, Land and Minerals, Maps and GIS Resources. Retrieved November 18, 2024, from https://www.dnr.state.mn.us/lands_minerals/gis_data_maps/index.html.

[90] US Mining. Wabasha County, Retrieved December 5, 2024, form http://www.us-mining.com/minnesota/wabasha-county.

swimming, biking, hiking, camping, horseback riding, hunting, cross-country and alpine skiing – among other activities. Additionally, the public (both local residents and tourists who visit the region) value this area alike for its scenic nature.

ROI: 1 mile

Duration: Construction (Short term) and Operations (Long term)

Size: Less than 1,000 feet of recreation trails and amenities would be crossed by the APR and RPAs.

Uniqueness: Uncommon

Location: Uncommon within Project area.

Context: The Project avoids impacts to areas in Wabasha County that would be considered tourist destinations. The Project would not preclude recreational activities or appreciably diminish the use or experience at tourist destinations. The Applicant has minimized impacts to tree clearing by selecting a route through areas that have already been predominately cleared and will implement the mitigation measures recommended by the Mississippi River Parkway Commission for the U.S. Highway 61 Scenic Byway crossing. They have coordinated with USACE to select a route that is compatible with the Rolling Prairie Property, which may be used for future tourism opportunities. Therefore, no additional mitigation measures are proposed.

The APR crosses two sections of the Zumbrowatha Grant-In-Aid snowmobile trail system at MP 0.2 and MP 9.7, which is managed by the Elba Snowbirds. The APR also crosses USACE interests associated with the Rolling Prairie Property and the U.S. Highway 61 Scenic Byway.

The Zumbro River is located approximately 0.3 mile north and east of the Kellogg Substation. Major recreational activities associated with the Zumbro River include swimming, wading, fishing, and kayaking. The Mississippi River is located beyond the Zumbro River, approximately 0.5 mile east of the Kellogg Substation. Major recreational activities associated with the Mississippi River include fishing, boating, and picnicking.

The Zumbrowatha trail system crosses at U.S. Highway 61 (**Appendix B, Map 9**). The Applicant plans to construct the Project from June 2027 through July 2028, which will likely not conflict with the winter use of the trail system by snowmobilers. If construction activities impact any of the snowmobile trails, they will coordinate with the trail associations regarding notifications and possible temporary trail closures and/or re-routes. The Applicant is minimizing impacts to the U.S. Highway 61 Scenic Byway through consultation with the Mississippi River Commission and has coordinated the route across USACE interests in the Rolling Prairie Property, which may be used for future recreational use.

The installation of the Xcel and Peoples distribution line would not indirectly affect recreation. Any crossings would to these facilities would be placed in a bore underneath the roadways.

Significance: Impacts are expected to be minor.

Mitigation

Because impacts are assessed as minor, no mitigation is proposed.

4.8. Archaeological and Historic Resources

Archeological resources are locations where objects or other evidence of archaeological interest exists, and can include tribal mounds and earthworks, burial grounds, precontact ruins, or historical remains. Historic resources are sites, buildings, structures, or other antiquities which are of state or national significance. There are no National Register properties within or near the APR and RSAs. The closest properties (seven buildings and structures and one district) are located approximately 2.0 miles to the east near Alma, Wisconsin.[91]

A review was conducted of the GLO plat maps and notes on file with the Bureau of Land Management. The plat maps of the Project area illustrated conditions in 1854 and 1856 as being primarily prairie with stands of native trees around a few small lakes with connecting streams. An unnamed trail is present south of Kellogg, this trail does not show on any historic aerial photographs. To the southwestern end of the Project, two roads appear on the plats, "Road from Greenwood to Wabasha" and "Road from Norwegian Settlement to Wabasha" both roads now create Highway 42. Aerial photographs from 1937 show that roads have been constructed and farms have been established with agricultural fields dominating the landscape. Subsequent historic and modern aerial photographs show that the landscape of the Project area has remained largely the same since that time, with first level roads and second level roads being the main addition to the area. No historic cemeteries are located within the APR or RSAs.[92]

Seventeen archaeological sites were identified during this study within 1.0 mile of the Project, but none within 1,000 feet of the APR or RSAs. Due to distance, no impact to the known sites is anticipated. The previously recorded archaeological sites have consisted of precontact lithic scatters, artifact scatters, isolated finds, and mound areas. The sites were recorded between 1971 and 2003. According the Survey Implementation Model (MM4) developed by the Minnesota Office of the State Archaeologist, the eastern one-third of the Project is modeled as having a moderate to high potential for the presence of archaeological sites, and the western two-thirds is modeled as having an unknown potential due to a lack of other archaeological surveys conducted in similar settings.[93] Buried archaeological layers and remains can occur within alluvial sediments on the Mississippi River valley floor, and upland landscape features above the river valley floor are known to have a range of prehistorical and early historical archaeological resources, including large encampments and settlements, effigy mounds, and burial mounds.

Thirty-eight historic buildings and structures were identified within the ROI. Four are crossed by or adjacent to the APR: U.S. Highway 61 is a linear resource which the Project crosses immediately to the southwest of Kellogg; 161st Avenue is crossed by the Project south of Kellogg; and the Chicago, Milwaukee, and St. Paul Railroad (CMSP) right of way (ROW) is

[91] National Park Service. National Register of Historic Places. Retrieved January 6, 2025, from https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466.
[92] Office of the State Archaeologist. Current Records Map - OSAsites. Retrieved January 6, 2025, from https://osaportal.gisdata.mn.gov/CurrentRecordsMap.
[93] Office of the State Archaeologist. Current Records Map - OSAsites. Retrieved January 6, 2025, from https://osaportal.gisdata.mn.gov/CurrentRecordsMap.

crossed to the southeast of Kellogg.[94] Previously recordings of these three linear sites indicate that both U.S. Highway 61 and 161st Avenue are not eligible for listing on the National Register, while the CMSP has been previously evaluated as potentially eligible for listing on the National Register of Historic Places under Criteria C. The fourth site that the Project crosses is State Highway 42, which the Project crosses to the southeast of Kellogg. From the crossing, the Project parallels the southern edge of highway until the southwest end of the Project.

Potential Impacts

ROI: 1 mile

Duration: Construction (Short term), Operation (Long term), and Permanent

Size: N/A

Uniqueness: Uncommon

Location: Given the lack of a systematic and intensive archaeological inventory, the location of impacts to archaeological and cultural resources cannot be fully determined.

Context: Construction of transmission lines can disrupt or remove archaeological resources. Placement of a transmission line near historic resources has the potential to impair or decrease the historic and aesthetic quality of the resource by modifying the visual aspects of the resource. Because a systematic and intensive archaeological inventory has not been conducted for the Project, the context of impacts to archaeological and cultural resources cannot be fully determined.

The installation of the Xcel and Peoples distribution line could indirectly affect archaeological resources through clearing, grubbing, trenching, and other types of dirt work. No known archeological resources are known within the corridor at this time.

Significance: The aboveground nature of a transmission line potentially reduces impacts on cultural, historic, and archaeological resources. Poles supporting the existing distribution lines will be visible from the four linear sites noted above. Because the Project is collocated and parallels existing utility and road ROWs, it will not present an appreciable change in the existing viewshed. The remaining identified 34 historic buildings and structures will not be impacted due to distance from the Project. The remaining buildings and structures include farmsteads and associated outbuildings, dwellings, commercial buildings, churches, and bridges.

No direct or indirect impacts to archaeological or historic resources are known at this time.

Mitigation

Avoidance of known archaeological and historic resources is the preferred mitigation strategy. As a standard Commission HVTL route permit condition, if previously unidentified archaeological sites are found during construction, the applicant would be required to stop construction and contact SHPO to determine how best to proceed. Should human remains be

[94] Minnesota Geospatial Commons. Minnesota's Statewide Historic Inventory Portal. Retrieved January 6, 2025, form https://mnship.gisdata.mn.gov/private-map.

discovered, ground disturbing activity will stop, immediately and local law enforcement will be notified in accordance with the Unanticipated Discovery Plan developed for the Project.[95]

Given the lack of previous archaeological survey over much of the ROI, it is recommended that a Phase I archaeological reconnaissance of the final route and substation location be conducted.

4.9. Natural Resources

4.9.1.1. Air Quality

Generally, air quality can be defined as a measure of how healthy the air is for humans, animals, and plants. The National Ambient Air Quality Standards (NAAQS), promulgated by the Clean Air Act, establishes standards for seven criteria pollutants in the United States: carbon monoxide (CO), lead (Pb), nitrogen oxides (NOx), ozone (O3), particulate matter less than 2.5 microns in diameter (PM2.5), particulate matter less than 10 microns in diameter (PM10), and sulfur dioxide (SO2).[96] The US EPA publishes a list of annual nonattainment and maintenance status for each county by state under the NAAQS. Wabasha County is currently in attainment for all criteria pollutants.[97]

The applicant completed preliminary estimates of the total criteria pollutants expected to be emitted for construction of the APR including the Kellog Substation (**Table 16**).[98] Given the various RSAs do not add substantial lengths, these figures are likely to be similar if an RSA or RSAs are selected.

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: N/A

Context: Higher concentrations of air pollutants, especially particulate matter, will be experienced by residences, pedestrians, businesses, and roadway travelers closer to the construction. Particulate matter emissions may temporarily reduce visibility near the proposed route. Impacts are expected to be minimal and short term. Construction progresses in a linear way along the transmission line in which construction will be occurring only temporarily in one

[95] MDOC. Efiling. Retrieved December 25, 2024, from https://efiling.web.commerce.state.mn.us/documents/%7B7066818E-0000-C968-811D-2B1061982814%7D/download?contentSequence=0&rowIndex=76.

[96] Sullivan et al. (2017). Environmental Law Handbook, Twenty-Third Edition. *Bernan Press*.

[97] USEPA. Nonattainment Areas for Criteria Pollutants (Green Book). Retrieved December 3, 2025., form https://www.epa.gov/green-book.

[98] Dairyland's RPA.

Table 16. Estimated Project Criteria Pollutants Emission Totals (Construction).

Emissions (tons) Estimate						
Source	**VOC**	**CO**	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**
Off-Road Engine Equipment	2.86	8.72	40.71	1.51	1.51	0.02
Unpaved Roads	-	-	-	0.48	4.73	-
Commuters and Delivery Vehicles	0.75	3.79	19.50	0.59	0.59	0.01
Earthmoving	-	-	-	1.29	12.18	-
Project Emission Totals	3.61	12.51	60.20	3.86	19.05	0.03

place. Minor operational emissions would occur throughout the lifespan of the transmission line and substation. Transmission lines produce small amounts of ozone (O3) and nitrous oxides (NOx) through ionization of air molecules during corona discharge. Other operational emissions would be due to fuel combustion and particulate matter emissions from vehicle usage to and from the transmission line and substation for regular maintenance activities and emergency maintenance.[99] Particulate matter emissions could also occur if operational maintenance requires disturbing ground. Maintenance activities of the substation could include activities such as repairing circuit breakers and conductors, cleaning, and replacing parts. Maintenance activities of the transmission line could include replacing poles, tree trimming, and access road maintenance. Emissions during operation of the transmission line and substation are expected to be minimal and temporary. The Kellogg Substation construction is expected during the summer of 2026 and the transmission line construction is expected from 2027 to 2028. An air quality permit from the MPCA would not be required for any construction element or operation of the Project.

The installation of the Xcel and Peoples distribution line would not indirectly affect air quality.

[99] Minnesota Department of Commerce (2021). Environmental Assessment: Frazee to Erie Transmission Line Project. Retrieved January 4, 2025, from https://eera.web.commerce.state.mn.us/eera/web/project-file/11849.

Significance: Construction activities will create exposed areas susceptible to wind erosion. Projects that involve movement of soil and/or exposure of erodible surfaces generate fugitive dust emissions during excavation, trenching, and other earthmoving activities. The magnitude of emissions is dependent on weather conditions and the construction activity taking place.[100] The applicant will minimize dust generated by construction activities by utilizing soil moistening techniques during construction along the roads traveled and within the ROW and limiting vehicle speeds. Additionally, soil should only be disturbed if necessary for construction.

Emissions of criteria pollutants during operation of the transmission line and substation are expected to be minor. Transmission lines produce small amounts of ozone (O_3) and nitrous oxides (NO_x) through ionization of air molecules during corona discharge. The State of Minnesota has an ozone limit of 0.08 parts per million (ppm).[101] The federal ozone limit is 0.07 ppm.[102] Corona-induced ozone and nitrogen oxides are typically not a concern for power lines with operating voltages at or below 161 kV because the EF intensity is too low to produce significant corona. Therefore, the Applicant expects ozone and nitrous oxides concentrations associated with the Project including the Kellogg Substation to be negligible, and well below all federal and state standards.[103] An air quality permit from the MPCA would not be required for any construction element or operation of the Project Routine maintenance and emergency maintenance events of the substation and transmission line during operation would be infrequent, and are expected to emit minor amounts of criteria pollutants during each visit. An air quality permit from the MPCA would not be required for any construction element or operation of the Project.

Mitigation

Appropriate dust control methods will be implemented, including but not limited to:

- Reduced speed limits on access roads and water or other non-chloride-containing dust suppression applications;
- Water application to the ROW to suppress dust during dry weather, as needed;
- If the ROW is wet during construction activities, vehicle tracking of soil from the ROW will be minimized by using wooden or plastic matting at access points; and
- Street sweeping where soils are tracked onto paved roads in accordance with the MPCA Construction Stormwater General Permit.

4.9.1.2. Climate Change

Minnesota is experiencing rapidly evolving climate change patterns. Across the State, daily average minimum temperatures have been increasing, especially in the winter. From December

[100] USEPA. (2022). Fugitive Dust Control Measures and Best Practices. Retrieved January 5, 2025, from https://www.epa.gov/system/files/documents/2022-02/fugitive-dust-control-best-practices.pdf. .
[101] Minn. R. 7009.0800
[102] USEPA. Air Quality. Retrieved December 10, 2024, from https://www.epa.gov/ozone-pollution/2015-national-ambient-air-quality-standards-naaqs-ozone.
[103] Dairyland's RPA

to February, the temperature has increased 6 degrees Fahrenheit in central Minnesota and 4.9 degrees Fahrenheit in southern Minnesota between 1895 to 2021. These increases in temperature affect Minnesota wildlife, recreation, and businesses that are dependent on winter months.[104] Greenhouse gas (GHG) emissions are an attributing factor to climate change. Overall, the State is trending down in GHG, going from 177 million tons of carbon emissions in 2005 to 137 million tons of carbon emissions in 2020. [105] This can be attributed to the reduction in emissions from transportation; agriculture, forestry, and land use; electricity generation, commercial and waste. The two sectors that have increased in this time frame were industrial and residential.[106]

Potential Impacts

ROI: Wabasha County

Duration: Construction (Short term) and Operations (Long term)

Size: N/A

Uniqueness: Common

Location: Localized

Context: Construction of the Project including the Kellogg Substation is estimated to emit 2,895 tons of carbon dioxide equivalent (CO_2e); the annual estimated CO_2e emittance in the State of Minnesota was 137,208,328 tons in 2020 (**Table 17**) [107],[108] Minor operational emissions of $CO2_e$ would occur throughout the lifespan of the transmission line and substation. Operational emissions would be due to fuel combustion from vehicle usage to and from the transmission line and substation for regular maintenance activities and emergency maintenance. Transmission and distributions systems substations also typically include circuit breakers that contain sulfur hexafluoride (SF_6)[109], a greenhouse gas that has a global warming potential 22,800 times that of CO_2.[110] Fugitive emissions can occur from these breakers due to leakage throughout the substation lifespan, but are minor amounts. Emissions may occur during installation, use, servicing, and decommissioning of the substation.[111] Emissions during operation of the

[104] MPCA, Climate Change Impacts. Retrieved January 6, 2025, from https://www.pca.state.mn.us/air-water-land-climate/climate-change-impacts.
[105] MPCA. Summary. Retrieved January 3, 2025, from https://public.tableau.com/app/profile/mpca.data.services/viz/GHGemissioninventory/GHGsummarystory.
[106] MPCA. GHC Emissions Data. Retrieved January 3, 2025, from https://public.tableau.com/app/profile/mpca.data.services/viz/GHGemissioninventory/GHGsummarystory.
[107] MPCA. Greenhouse Gas Emissions in Minnesota 2005-2020. Retrieved January 4, 2025, from https://www.pca.state.mn.us/sites/default/files/lraq-2sy23.pdf.
[108] Dairyland's RPA
[109] California Public Utilities Commission. Proponent's Environmental Assessment. West of Devers Upgrade Project. Retrieved January 5, 2025, from https://ia.cpuc.ca.gov/environment/info/aspen/westofdevers/.
[110] MPCA. Greenhouse Gas Emissions in Minnesota 2005-2020. Minnesota Pollution Control Agency. Retrieved January 5, 2025, from https://www.pca.state.mn.us/sites/default/files/lraq-2sy23.pdf. .
[111] USEPA. GHGRP Electrical Equipment Production and Use. Retrieved January 5, 2025, from https://www.epa.gov/ghgreporting/ghgrp-electrical-equipment-production-and-use.

transmission line and substation are expected to be minimal and temporary.[112] Emissions during operation of the transmission line and substation are expected to be minimal and temporary. There are no current thresholds in Minnesota for determining the significance of GHG emissions for projects. However, Minn. Stat. 216H.021 - Greenhouse Gas Emissions Reporting – requires that facilities whose annual CO_2e emissions exceed 10,000 tons report their emissions to a reporting system.[113] Therefore, it can be assumed that the State of Minnesota considers the starting threshold for being a 'relevant' emission align with the reporting threshold, which is somewhere between 10,000 and 100,000 tons per year.

The installation of the Xcel and Peoples distribution line would have an indirect effect on climate change.

The estimated criteria pollutant emissions and greenhouse gas emission calculations were calculated for the APR, including the Kellogg Substation, which is proposed to be approximately 13.3 miles in length. Other alternative routes vary from 13.3 miles (RSA GAA-1) to 14.2 miles

Table 17. Estimated Greenhouse Gas Emissions.

Emissions (tons) Estimate of Project				
Emission Source	**CO_2 (Short Tons)**	**CH_4 (Short Tons)**	**N_2O (Short Tons**	**CO_{2e} (Short Tons)**
Off-Road Engine Equipment	2,698	.01	0.02	2,707
Commuters and Delivery Vehicles	188	0	0	188
Project Emission Totals	2,886	0.1	0.02	2,895
Notes: CO_2 – carbon dioxide, CH_4 – methane; 1 short ton CH4 = 25 short tons CO2e, N_2O – nitrous oxide; 1 short ton N_2O = 298 short tons CO2e, CO_{2e} – carbon dioxide equivalent				

(RSA AAA-2). Longer alternatives will emit more pollutants during construction than alternatives shorter in length due to equipment being used for a longer duration. It is assumed that the

[112] USEPA. GHGRP Electrical Equipment Production and Use. Retrieved January 5, 2025, from https://www.epa.gov/ghgreporting/ghgrp-electrical-equipment-production-and-use.
[113] Minnesota Legislature (2023). Section 216H.021, Greenhouse Gas Emissions Reporting. Minnesota Legislature. Retrieved January 5, 2025, from https://www.revisor.mn.gov/statutes/cite/216H.021.

relationship between total emissions of GHG's and the alternative route length will be approximately linear (i.e., emissions will increase in a linear manner as route increases). Therefore, compared to total emissions of 2,895.30 short tons of $CO2_e$ over the shortest route length of 13.3 miles, it is assumed that the longest route of 14.2 miles would emit approximately 3,091.22 short tons $CO2_e$. The difference between the longest and shortest route is estimated at 195.92 short tons $CO2_e$. Minimal differences of total GHG emissions are expected between the shortest route and RSA B through RSA-F. These impacts to air quality during construction will be intermittent, localized, short-term, and minimal. Minor emissions of GHG will occur due to the combustion of fossil fuels from vehicles and equipment. Exhaust emissions can be minimized by keeping vehicles and equipment in good working order, not running equipment unless necessary, minimizing the number of driving trips, and restricting idling vehicles except during extreme cold weather. Emissions from diesel engines will meet the standards for mobile sources established by the U.S. EPA mobile source emission regulation (40 CFR Part 85).

Deforestation is another source of carbon dioxide release to the atmosphere, as trees act as a carbon sink, absorbing carbon dioxide from the atmosphere and storing it. Minimal vegetation clearing will be a part of the Project, resulting in minimal impacts. The construction zone will be restored to pre-construction conditions.

Long-term Project impacts to climate change will be negligible. The existing 161 kV circuit is being relocated to a new location. Impacts from the new transmission line are expected to be similar to the existing line, although the new transmission line will be approximately 3 miles longer than the existing line. Indirect Project impacts include making accommodations for the Mankato to Mississippi River 345 kV Transmission Project, which may have greater environmental impacts than this relocation project.

Significance: Environmental conditions cause transmission line deterioration over time.[114] Long-term Impacts of climate change on transmission lines include increase of wind and ice storms affecting applied loads and increase of probability of structural failure due to an increase of extreme weather events. [115] Increased rainfall intensity and humidity would result in greater corona losses. Extreme weather events could impact the reliability and life span of the proposed Project.

Mitigation

The Project will be designed to withstand the evolving environmental conditions with a changing climate according to modern design standards.[116]

[114] Gupta, P., Tuttelberg, K., & Kilter, J. (2024). Weather Dependency of Corona Loss on 330 kV overhead transmission lines. International Journal of Electrical Power & Energy Systems. 155. https://doi.org/10.1016/j.ijepes.2023.109537.
[115] Rezaei, S., Chouinard, L., Langlois, S., & Legeron, F. 2016. Analysis of the effect of climate change on the reliability of overhead transmission lines. Sustaintable Cities and Society. 27, 137-144. https://doi.org/10.1016/j.scs.2016.01.007
[116] Gupta, P., Tuttelberg, K., & Kilter, J. (2024). Weather Dependency of Corona Loss on 330 kV overhead transmission lines. International Journal of Electrical Power & Energy Systems. 155. https://doi.org/10.1016/j.ijepes.2023.109537.

4.9.1.3. Geology and Topography

Topography

The APR travels across varying topography. Based on a review of the U.S. Geological Survey 7.5' series topographic maps housed at the DNR portal, the western 8.5 miles of the APR occurs over flat and rolling terrain ranging in elevation from approximately 1,100 to 1,200 feet above mean sea level (amsl). The APR then decreases in elevation sharply from approximately 1,100 feet to 700 feet amsl from MPs 8.5 to 9.7 as the APR descends the bluff on the east side of the Mississippi River valley. The remaining portion of the APR between MPs 9.7 to 13.3 is generally flat with a minor decrease in elevation from 700 feet to 680 feet. The RSAs are located in the western section of the APR, sharing similar elevations of 1,100 feet to 1,200 feet amsl, in flat and rolling terrain. RSA-GAA-1 and RSA-GAA-2 both drop to a lower elevation of approximately 950 feet amsl between MPs 8.5 to 9.7. RSA-F drops near the lowest point of elevation established along the route at approximately 700 feet.

Geology

The Blufflands subsection of the Ecological Classification indicates that the depth of drift over bedrock varies from 0 to 50 feet. Bedrock can be exposed in river and stream valleys. Sediment thickness varies by landscape position. Large exposures of bedrock (dolomite, limestone, and sandstone) occur in the steep ravines and bluffs. These exposures are primarily.[117]

Karst landscapes can develop where limestone and dolostone are at or near the surface. Limestone is composed mostly of the mineral calcite (calcium carbonate); dolostone is composed mostly of the mineral dolomite (calcium magnesium carbonate). Over time, the carbonate minerals in these rocks are dissolved by rain and groundwater, creating karst. In Minnesota, limestone and dolostone underlie the southeastern corner of the state, and erosion has removed most of the glacial cover and exposed the carbonate bedrock.[118],[119] The DNR has also noted the presence of karst in its early Project coordination comments.

Karst is characterized by sinkholes, caves, springs, and underground drainage dominated by subsurface channels that permit the rapid transportation of groundwater (or rapid conduit flow).[120] The conduit system receives localized inputs from sinking surface streams and as storm runoff through sinkholes A field-verified karst feature, such as a sinkhole, is direct evidence that karst processes are active both on the surface and in a karst aquifer in the subsurface. However, the absence of karst features on the land surface does not imply the absence of karst processes on the land surface or karst hydrology in the subsurface.

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[117] MDNR, Bluffsland Subsection. Retrieved January 10, 2025, from https://www.dnr.state.mn.us/ecs/222Lc/index.html. https://www.dnr.state.mn.us/ecs/222Lc/index.html.

[118] University of Minnesota, Caves and Karsts. Retrieved January 5, 2025, from https://cse.umn.edu/mgs/caves-and-karst.

[119] MDNR, GIS. Retrieved December 7, 2024, from https://gisdata.mn.gov/dataset/geos-surface-karst-feature-devel.

[120] MDNR. Groundwater. Retrieved December 3, 2024, from https://www.dnr.state.mn.us/waters/groundwater_section/mapping/springs.html.

The APR and RSAs are located in karst-prone areas for approximately 8.6 miles, generally between MP 0.0 and MP 8.6 along the APR and RSA-A through RSA-J, excluding RSA-HF. Fourteen documented sinkholes are located within 1 mile of the Project. The closest sinkholes to the APR and associated 100-foot-wide ROW are located approximately 55 feet west of the ROW at MP 2.4 and 650 feet west of the ROW at MP 3.3. The sinkholes also reside close to the RSAs A-F, the closest being located near RSA-A 730 feet west. Based on the available attribute data, the locations were identified in 1995 and 2001, respectively. Both locations have been filled.[121] Springs are located within the general Project area, but the closest springs are approximately 1.2 miles from the APR. The Kellogg Substation is not located in a karst-prone area (**Figure 10**).

ROI: 500 feet

Size: Length of APR and all RSAs.

Uniqueness: Common

Location: The topography is common along most of the APR from MP 0.0 to MP 8.5 and MP 9.5 into the Kellogg Substation and RSA-A through RSA-F. It is uncommon from MP 8.5 to MP 9.6 along the APR and RSA-GAA-1 and RSA-GAA-2.

The Project is located within a region prone to surface karst and within 1,000 feet of documented karst features. The Karst landscape is found between MP 0 and MP 8.6 and along RSA-A, and RSA-B through RSA-F.

Context: Construction of the Project will not alter the topography along the APR and RSAs and associated 100-foot-wide ROW.

While the Project is located within a region prone to surface karst and is within 1,000 feet of documented karst features, other transmission and distribution line projects have been successfully constructed and operated through this area (including the CapX2020 system) as a result of geotechnical investigations during the design phases of the projects To ensure structural stability in this geological setting, the Applicant will perform geotechnical investigations, including development of a Karst Survey Plan and additional coordination with the DNR. Following completion of the studies, the Applicant will work with the DNR to develop a Karst Contingency Plan prior to construction that includes actions to mitigate any unexpected voids encountered during construction.

Potential Impacts

Final route construction, whether it is the APR or portions of the RSA, will not likely affect the Karst landscape or cause a sinkhole to form. However, a Karst Contingency Plan and a Karst Survey Plan, which will become an enforceable provision of the final route permit, will be implemented with help from the DNR to mitigate any possibility of causing sinkhole formation.

The installation of the Xcel and Peoples distribution line would not indirectly affect geological resources or significant features.

[121] MDNR. GISdata. Retrieved November 14, 2024, from https://gisdata.mn.gov/dataset/geos-karst-feature-inventory-pts.

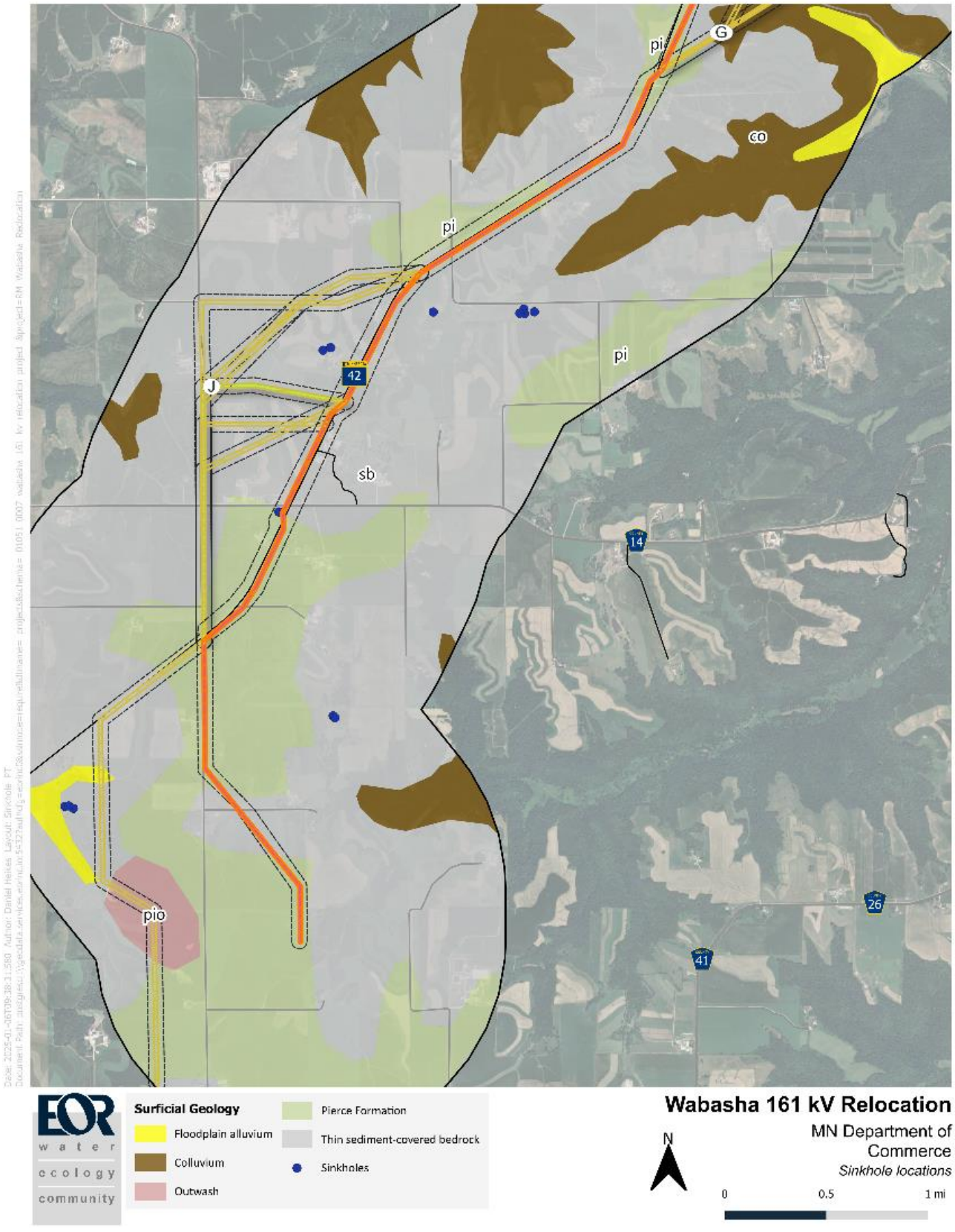

Figure 10. Surface Geology and Karst Features.

Significance: Impacts to the area's topography are expected to be negligible. With implementation of mitigation measures and BMPs, geological impacts are anticipated to be minor.

Mitigation

Because the topography will not be altered, no mitigation is proposed.

The APR and RSAs are located within a region prone to surface karst and within 1,000 feet of documented karst features.[122] However, transmission and distribution line projects have been successfully constructed and operated through this area, including the CapX2020 system. To ensure structural stability in this geological setting, the Applicant will perform geotechnical investigations as outlined in Section 3.2.2, including development of a Karst Survey Plan and additional coordination with the DNR. Following completion of the studies, the Applicant will work with the DNR to develop a Karst Contingency Plan prior to construction that will identify the locations of the proposed geotechnical investigations in relation to proposed structure locations and geophysical studies and includes actions to mitigate any unexpected voids encountered during construction.

4.9.1.4. Surface Water

Hydrologic features such as wetlands, lakes, and rivers perform several important functions within a landscape, including flood attenuation, groundwater recharge, water quality protection, and wildlife habitat production (**Appendix D**). The Project lies within the Mississippi River- Winona and Zumbro River watersheds in the east-central portion of the Lower Mississippi River Basin.[123]

Lakes and Ponds

There are no lakes or ponds crossed by the APR or RSA-B through RSA-G.[124] However, a single pond occurs within the RSA-AAA-1 and RSA-AAA-2 (**Table 18**).[125],[126] In addition, McCarthy Lake is located approximately 240 feet north of the APR and associated ROW near MP 11.0. McCarthy Lake is adjacent to a wetland mitigation bank, which is located to the northeast of the lake. It is also listed as a Public Waters Basin, a shallow lake by the DNR and a wild rice water by the MPCA.[127][128] McCarthy Lake is not identified on the DNR's statewide wild rice

[122] MDNR. Karst Feature Inventory. Retrieved November 18, 2024, from https://arcgis.dnr.state.mn.us/portal/apps/webappviewer/index.html?id=9df792d8f86546f2aafc98b3e31adb62.
[123] MDNR. Watersheds. Retrieved November 14, 2024, from https://www.dnr.state.mn.us/watersheds/map.html.
[124] MDNR. GISdata, Retrieved November 14, 2024, from https://gisdata.mn.gov/dataset/water-dnr-hydrography.
[125] MDNR. National Wetland Inventory for Minnesota. Retrieved November 16, 2024, from https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014. Accessed.
[126] MDNR. Hydrography Dataset. Retrieved November 16, 2024, from https://gisdata.mn.gov/dataset/water-dnr-hydrography.
[127] Minnesota Geospatial Commons. Shallow Lakes. Retrieved November 13, 2024, from https://gisdata.mn.gov/dataset/water-shallow-lakes-id-by-wldlif.
[128] MPCA. Wild Rice. Retrieved November 13, 2024, from https://public.tableau.com/app/profile/mpca.data.services/viz/wild_rice_v4/Information.

inventory. No other wild rice waters or shallow lakes are crossed by the APR or RSAs. The next closest wild rice water and shallow lake are 1.8 and 1.6 miles, respectively, from the APR.[129]

Table 18. Lakes and Ponds – RSA-AAA-1 and RSA-AAA-2.

Lake/Pond Name	NWI Classification	Length	Map
Unnamed farm pond	Palustrine Unconsolidated Bed (PUBH)	130 feet	1

Rivers and Streams

The DNR Hydrography dataset has mapped fifteen rivers and streams that intersect the APR and RSA (**Table 19**).[130] All but one of the streams are mapped as unnamed, intermittent streams. The remaining stream is located near MP 9.5 and is a perennial stream named Gorman Creek. It is also a DNR Public Waters watercourse. The RSAs intersect some streams that do not intersect the APR. Five of the alternative routes cross two of the streams included in the APR route (MAJ-070413040 and M-034-017-003). A combination of the RSAs cross nine additional streams – all unnamed, intermittent first-order streams. In addition, all the RSAs cross three unnamed streams (MAJ-07046396, MAJ-070411303, MAJ-07046913) as well as Gorman Creek, following the path of the APR. All of the streams are tributaries to the Mississippi River, which is approximately 0.4 miles east of the Kellogg Substation. Maps depicting stream crossings are included in **Appendix D**.

Table 19. Summary of Rivers and Streams.

River/Stream Name (Kittle Number)	Flow Regime	Agency Designation	Location
Unnamed Stream (MAJ-070413040)	Intermittent	NA	APR
Unnamed Stream (M-032-031-001)	Intermittent	NA	APR
Unnamed Stream (MAJ-070410210)	Intermittent	NA	APR

[129]MDNR. Wild Rice Atlas. Retrieved November 13, 2024, from https://files.dnr.state.mn.us/fish_wildlife/wildlife/wildrice/statewide-inventory-wild-rice-waters.pdf.
[130] Minnesota Geospatial Commons, Hydrography Dataset. Retrieved November 20, 2024, from https://gisdata.mn.gov/dataset/water-dnr-hydrography.

River/Stream Name (Kittle Number)	Flow Regime	Agency Designation	Location
Unnamed Stream (M-034-017-003)	Intermittent	NA	APR
Unnamed Stream (MAJ-07046913)	Intermittent	NA	APR (2 crossings)
Gorman Creek (M-033)	Perennial	Public Water, Impaired	APR
Old Channel Zumbro River (MAJ-070411303)	Intermittent	NA	APR (3 crossings)
Unnamed Stream (MAJ-07046396)	Intermittent	NA	APR
Unnamed Stream (MAJ-070420600)	Intermittent	NA	RSA-A
Unnamed Stream (MAJ-070415694)	Intermittent	NA	RSA-A (2 crossings)
Unnamed Stream (MAJ-070419314)	Intermittent	NA	RSA-B, RSA-C, RSA-D, RSA-E, RSA-F
Unnamed Stream (MAJ-070412114)	Intermittent	NA	RSA-C, RSA-D, RSA-E, RSA-F
Unnamed Stream (MAJ-070413040)	Intermittent	NA	RSA-B, RSA-C, RSA-D
Unnamed Stream (M-034-017-003)	Intermittent	NA	RSA-F, RSA-E
Unnamed Stream (MAJ-070414742)	Intermittent	NA	RSA-F
Unnamed Stream (MAJ-070414091)	Intermittent	NA	RSA-E, RSA-F
Unnamed Stream (MAJ-07047068	Intermittent	NA	RSA-G

Public Waters

Public Waters are wetlands, water basins and watercourses of significant recreational or natural resource value in Minnesota.[131] The DNR has regulatory jurisdiction over these waters, which are identified on the DNR Public Waters Inventory maps.

The APR and RSA's intersect one DNR Public Water at MP 9.5, a watercourse named Gorman Creek.[132] This crossing was identified by DNR in its early coordination review comments. Gorman Creek is a tributary to the Zumbro River, which ultimately connects to the Mississippi River. One additional public water basin (McCarthy Lake) is adjacent to but outside the APR. It is approximately 240 feet north of the ROW at MP 11.0. None of the RSAs cross additional Public Waters.

Impaired Waters

Section 303(d) of the Federal Clean Water Act requires states to bi-annually publish a list of streams and lakes that are not meeting their designated uses because of various impairments. The list (known as the 303(d) list) is based on violations of water quality standards and listed waters are described as "impaired." In Minnesota, the MPCA has jurisdiction determining 303(d) waters. The 2022 Impaired Waters and the Draft 2024 Impaired Waters data were evaluated for this Project.[133],[134] The segment of Gorman Creek that crosses the APR is listed under the 2022 data as impaired for Aquatic Macroinvertebrate Bioassessments and is further listed under the draft 2024 data as impaired for Fishes Bioassessments. The next closest impaired water is the Zumbro River. The Zumbro River is approximately 0.3 mile east of the Kellogg Substation and was listed in 2022 and is proposed for relisting in 2024 as impaired for Fecal Coliform, Mercury in Fish Tissue, PCB in Fish Tissue, and Turbidity. None of the RSAs cross additional impaired waters.

Potential Impacts

ROI: ROW

Duration: Construction (Short term), Operations (Long term), and Decommissioning (Long term)

Size: The majority of the surface waters crossed by the APR are less than 300 feet wide.

Uniqueness: Common

Location: Common at each crossing.

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[131] Minn. Stat. § 103G.005
[132] Minnesota Geospatial Commons. Public Waters. Retrieved November 24, 2024, from https://gisdata.mn.gov/dataset/water-mn-public-waters.
[133] Minnesota Geospatial Commons. Impaired Waters (2022). Retrieved November 24, 2024, from https://gisdata.mn.gov/dataset/env-impaired-water-2022.
[134] Minnesota Geospatial Commons. Impaired Waters (2024). Retrieved November 24, 2024, from https://gisdata.mn.gov/dataset/env-impaired-water-2024-draft.

Context: There are no lakes crossed by the APR. Waterbodies crossed by the APR and RSAs, including the Gorman Creek Public Water (subject to a License to Cross Public Waters from the DNR), are spaced such that construction activities related to pole placement will avoid impacts to those water resources and work will occur outside of the Ordinary High Water Level.

Potential surface water related impacts include soil disturbance from construction, stormwater runoff, dewatering of foundation borings, and transmission lines crossing ponds and streams. Construction equipment use, repair, and maintenance involves fluids that may leak or spill with the potential to reach surface water. If equipment crosses a stream or inadvertently enters a waterbody, direct impacts such as bottom disturbance or petroleum-based products from the equipment may may end up impacting surface waters.

Stormwater runoff from construction areas can cause direct impacts to surface waters by discharging sediment into the waterbody and damaging riparian vegetation along the edge of the stream. Soils will be disturbed by clearing trees and vegetation, access road construction, and site grading for project components.

The Applicant may elect to install temporary bridges across waterways prior to construction along the ROW. In addition, they will use erosion and sediment control BMPs (silt fencing) to reduce the potential for sediment to reach any streams or ponds adjacent construction activities. The Project will not contribute to Gorman Creek's impaired listing for Aquatic Macroinvertebrate Bioassessments as no work will occur within the waterbody.

There are no streams or waterbodies that would be directly impacted from substation work at proposed Kellogg Substation. Impacts to the Mississippi River through runoff is not anticipated.

The installation of the Xcel and Peoples distribution line could indirectly affect surface waters, though impacts would likely be limited and temporary. It is anticipated that the appropriate BMPs would be used to ensure compliance with various state and federal laws and regulations.

Significance: Impacts to water resources are expected to be minor with implementation of mitigation measures and BMPs.

Mitigation

Construction in streambeds, lakes, ponds, and other bodies of water should be avoided whenever possible. If not feasible, the following precautions, among others, can include:

- Work should be conducted during low flow.
- Disturbed vegetated area should be reseeded with native species seed mix suitable to local conditions.
- If possible, work under frozen ground conditions.
- All preconstruction contours should be maintained or restored after construction is done.
- Use of wildlife friendly erosion control measures, such as straw bales, mulch, or silt fences should be used during the construction process.
-

4.9.1.5. Groundwater

The DNR divides Minnesota into six groundwater provinces. The western segment of the Project, from MPs 0.0 to 8.8, is located in the Karst Province (Province 3), and the eastern segment of the Project, MPs 8.9 to 13.3, is located in the East-central Province (Province 1). The Karst Province is characterized by thin or absent sediment, and therefore aquifers are not as productive, except in major river valleys where sediment thickness is greater. Province 3 is underlain by productive bedrock aquifers; however, those closest to the land surface are often impacted by human activities. The East-central Province is characterized by buried sand aquifers and relatively extensive surficial sand plains, part of a thick layer of sediment deposited by glaciers overlying the bedrock. This Province is underlain by sedimentary bedrock with good aquifer properties.[135]

The Minnesota Department of Health (MDH) enforces the federal Safe Drinking Water Act including the National Primary Drinking Water Regulations created under the Act.[136] These regulations are legally enforceable standards and treatment techniques that apply to public water systems that protect drinking and source water. As a result, Minnesota adopted the State Wellhead Protection (WHP) Rule 4720.5100-4720.5590 in 1997.[137] The MDH is responsible for administering the State WHP Program. Under the WHP Program, public water systems are required to develop and implement a plan that protects its drinking water source. Wellhead Protection Areas (WHPA) are approved surface and subsurface areas surrounding a public water supply well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field.[138] Drinking Water Supply Management Areas (DWSMAs) contain the WHPA but are outlined by clear boundaries, like roads or property lines. The DWSMA is managed in a WHP plan, usually by a city.[139]

The APR and RSAs do not cross any DWSMAs or WPAs. The closest DWSMA is the Kellogg DWSMA, located approximately 770 feet northwest of MPs 9.4 to 9.6 along the APR. No well-head protection acres are crossed by any of the routes.

The County Well Index (CWI) is a database that contains subsurface information for over 533,000 water wells drilled in Minnesota. CWI is maintained by the Minnesota Geological Survey (MGS) in partnership with the MDH. The data are derived from well contractors' logs of geologic materials

[135] MDNR. Groundwater. Retrieved November 24, 2024, from https://www.dnr.state.mn.us/groundwater/provinces/index.html.
[136] MDH. Water Rules and Guidance. Retrieved November 30, 2024, from https://www.health.state.mn.us/communities/environment/water/rules/index.html.
[137] MDH. Wellheads. Retrieved November 30, 2024, from https://www.health.state.mn.us/communities/environment/water/rules/wellhead.html.
[138] Minnesota Geospatial Commons. Wellhead Protection Areas. Retrieved November 30, 2024, from https://gisdata.mn.gov/dataset/water-wellhead-protection-areas.
[139] MDH. Mapviewer. Retrieved November 30, 2024, from https://www.health.state.mn.us/communities/environment/water/swp/mapviewer.html.

encountered during drilling and later interpreted by geologists at the MGS.[140] The CWI indicates one located is within the APR (**Table 20**). No RSAs contain a well within their ROW.

Table 20. CWI Wells with the Proposed Alignment.

Unique ID	Within ROW	Surface Elevation	Well Depth	Static Water Level (Depth to Water)	Status	Use
432365	Yes	1,180 feet	425 feet	240 feet	Active	Domestic Consumption

Potential Impacts

ROI: ROW

Duration: Construction (Short term)

Size: N/A

Uniqueness: Common

Location: Common throughout Project area.

Context: Groundwater resources would not be significantly affected by the Project. Dewatering activities are not expected for this Project, and if the need arises, would likely be minor. The DNR can issue water appropriation authorizations if dewatering should exceed permit thresholds.

The installation of the Xcel and Peoples distribution line would not indirectly affect groundwater resources.

Significance: Anticipated impacts on for groundwater resources are expected to be negligible.

Mitigation

As groundwater resources will not be significantly impacted, no mitigation is proposed.

4.9.1.6. Wetlands

Wetlands are important resources for flood abatement, wildlife habitat, and water quality. Wetlands that are hydrologically connected to the nation's navigable rivers are protected federally under Section 404 of the Clean Water Act.

Wetlands

The USFWS produced NWI wetland maps based on aerial photographs and NRCS soil surveys starting in the 1970s. The NWI data were further updated for the state of Minnesota through a

[140]University of Minnesota, College of Science and Engineering. County Well Index. Retrieved December 10, 2024, from https://cse.umn.edu/mgs/cwi

multi-agency effort lead by the DNR and were published in 2019.[141] Wetlands identified by the Minnesota NWI may be inconsistent with current wetland conditions. However, Minnesota NWI data is the most accurate and readily available database of wetland resources and were used to identify wetlands.

The APR intermittently crosses over three wetland communities and wetland complexes between MP 11.3 and MP 12.9. Wetland Cowardin classifications contained within the APR includes Palustrine Emergent (PEM).[142] Wetlands within the APR and crossed by the APR along (which poles would be installed and within the 100-foot-wide ROW where vegetation clearing would occur) are identified in **Table 21**. The only RSAs that cross portions of wetlands is RSA-A, which crosses two Palustrine Emergent Wetlands (PEM1D and PEM1Fh).[143]

Table 21. Summary of Wetlands Resource.[144]

NWI Classification and Identification	Location	Area (acres)	Map(s)
PEM1Af (2078858)	MP 11.3 and MP 11.5 along APR	0.34	9
PEM1A (2023991)	MP 12.8 along APR	0.36	9
PEM1C (2161321)	MP 12.9 along APR	0.11	9
PEM1D (2132131)	0.5 miles west of 215th Avenue, 1.3 miles south of State Highway 42 along RSA-AAA-1 and RSA-AAA-2	0.32	2
PEM1Fh (2122130)	0.5 miles west of 215th Avenue, 0.7 miles south of State Highway 42	0.01	2

[141] Minnesota Geospatial Commons. National Wetland Inventory. Retrieved November 20, 2024, from https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014.
[142] The Cowardian wetland classification codes are a series of letter and number codes that have been developed to adapt the national wetland classification system to map form. These alpha-numeric codes correspond to the classification nomenclature that best describes a particular wetland habitat. For example, PFO1A = Palustrine (P), Forested (FO), Broad-leaved Deciduous (1), Temporarily Flooded (A).
[143] MDNR. National Wetland Inventory for Minnesota. Updated 5/23/2019. Retrieved November 20, 2024, from https://gisdata.mn.gov/dataset/water- nat-wetlands-inv-2009-2014.
[144] MDNR. National Wetland Inventory for Minnesota. Retrieved November 20, 2024, from https://gisdata.mn.gov/dataset/water- nat-wetlands-inv-2009-2014.

In Minnesota, wetlands are also protected under the Wetland Conservation Act (WCA). In Wabasha County, the Wabasha Soil and Water Conservation District (SWCD) is the LGU for WCA. WCA places special preservation requirements on wetlands that qualify as Rare Natural Communities (RNCs). RNCs may include wetlands Native Plant Communities (NPC) with high conservation status rank (S1, S2, or S3), or MBS sites with an Outstanding or High ranking; however, the DNR ultimately determines whether a plant community constitutes a RNC.[145] The Applicant submitted a Minnesota Conservation Explorer (MCE) online review of the Project on December 13 and 14, 2023, which identified the McCarthy Lake MBS site located between MPs 12.8 and 12.9 as a potential RNC requiring additional consultation with the DNR.

Calcareous Fens

The MCE online review also identified a designated calcareous fen in the vicinity of the Project. Calcareous fens are a rare type of peat-accumulating wetland with unique vegetation influenced by its calcium-rich (non-acidic) chemistry, low oxygen and relatively cold soil conditions, and upwelling groundwater hydrology.[146],[147] Fens are protected under Minn. Stat. § 103G.223, which provides that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by an activity, unless approved by the DNR through a fen management plan. Based on the review of the DNR's Calcareous Fen geospatial dataset, one designated fen is located 1.4 miles south of MP 10.8 within the DNR's McCarthy Lake WMA.[148] The designated fen is named McCarthy Lake Fen (Fen ID number 31975).

Potential Impacts

ROI: ROW

Duration: Construction (Short term), Operation (Long term), and Permanent

Size: The majority of the wetlands crossed by the APR are less than 300 feet wide. RSA B crosses a wetland for 150 feet.

Uniqueness: Common

The condition and status of the wetland at MP 11.3 along the APR and the two Palustrine Emergent wetlands along RSA-AAA-1 and RSA-AAA-2 are not known. The Palustrine Emergent wetland complex (two distinct areas) at MP 11.8 to MP 12.1 is in actively cultivated field and is in poor condition. The Palustrine Emergent wetland complex along the APR at MP 12.9 is listed as a High-Quality in the MBS.

Location: The wetland complex crossed by the APR between MP 12.8 and 12.9 is listed as an MBS site ranked as "High" and qualifies as a potential RNC. The condition and status of the

[145]Minnesota Board of Waters and Soils. WCA Rare Natural Community Guidance. Retrieved November 29, 2024, from https://bwsr.state.mn.us/sites/default/files/2019-01/Wetland_WCA_Rare_Nat_Comm_Tech_Guidance.pdf.
[146] Minn. Stat. § 103G.223 and Minn. R. Part 8420.0935
[147] MDNR. Calcareous Fens. November 29, 2024, from https://files.dnr.state.mn.us/natural_resources/water/wetlands/calcareous_fen_fact_sheet.pdf
[148] Minnesota Geospatial Commons. Calcareous Fens. November 29, 2024, from https://gisdata.mn.gov/dataset/biota-nhis-calcareous-fens.

wetland at MP 11.3 along the APR and the two Palustrine Emergent wetlands along RSA-AAA-1 and RSA-AAA-2 are not known.

Context: Temporary impacts to wetlands may occur if they need to be crossed during construction. No staging or stringing setup areas will be placed within or adjacent to wetland resources to the extent feasible. If a terminal dead-end structure is in or adjacent to a wetland resource and there is no other location in that stringing section of line to pull from or to, stringing areas may need to be placed within or adjacent to wetland resources (This is rare and in most cases the applicants would be able to pull through such a dead-end and avoid wetlands.).[149] If stringing areas need to be placed within a wetland, the Applicant will consult with the DNR, USACE, and local government unit to obtain the required approvals prior to the disturbance.

Temporary impacts could include temporary fill through use of construction matting placement along access routes, structure work areas, and wire pull sites. While use of construction mats during construction in wetlands reduce soil compaction, it has potential to disturb or kill the underlying vegetation based on the amount of time these mats are in use. Vegetation removed during construction would be expected to regenerate relatively quickly, but disturbed areas would be more susceptible to invasive plant species, which could lead to long-term adverse impacts to wetland function. Suitable seed mixes will be used to lessen the chance of invasives becoming established in the Project area. The Applicant will be required to develop an Invasive Species Prevention Plan and file it with the Commission at least 14 days prior to the pre-construction meeting. Invasives will be monitored in accordance with Vegetation management requirements stipulated in any MDNR, MnDOT, or local governmental unit licenses or permits.[150] Commission route permits require use of construction mats when winter construction is not possible. The USACE may have additional permit requirements such as access to wetland and riparian areas be the shortest route possible to minimize travel through the wetland.

Transmission lines to be strung along existing rights-of-way would not require new wetland vegetation clearing for the ROW for all routing options. Permanent impacts would involve structure placement or other project related fill material being placed within a wetland for the life of the Project. Areas with this impact potential include locations where new poles may be installed. Each new structure foundation will result in approximately 115 square feet of disturbance within the existing right-of-way. The specific boundaries of these wetlands could change after the wetland delineation is completed. Permanent wetland impacts are not anticipated.

The installation of the Xcel and Peoples distribution line could indirectly affect wetland resources, though impacts would likely be limited and temporary. It is anticipated that the

[149] This is not a common situation, and in most cases, the Applicant would be able to pull through such a dead-end and avoid wetlands.

[150] Dairyland's RPA. Appendix I, Vegetation Management Plan. Retrieved January 29, 2024, from https://apps.commerce.state.mn.us/web/project-file/12760.

appropriate BMPs would be used to ensure compliance with various state and federal laws and regulations.

Significance: Impacts to wetland resources are expected to be negligible to minor with implementation of BMPs and mitigation measures.

Mitigation

Construction mats will be installed in wetlands to minimize compaction and impacts to vegetation. The Applicant will avoid placement of ATWS for material storage and staging or stringing setup areas within or adjacent to water resources to the extent practicable. As discussed in **Section 3.2**, wetlands will be restored to pre-construction conditions following completion of construction activities.

Span distances between pole structures will vary between 300 and 1,000 feet, which would allow the Applicant to place most poles outside of the wetland footprints and avoid permanent fill and wetland impacts. However, If the final transmission line design cannot enable the Project to span discrete wetland segments, then permanent impacts to wetlands will occur where a structure is located in the wetland. The wetland complex crossed by the APR between MP 12.8 and MP 12.9 is listed as an MBS site ranked as "High" and qualifies as a potential RNC. No poles will be placed in this wetland.

Vegetation maintenance procedures under transmission lines prohibit the establishment of trees. Existing trees will be removed throughout the entire ROW. The Applicant has developed a VMP for the Project.

As specified by the Minnesota Pollution Control Agency under the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit, riparian buffers are required during and after construction. For common resources such as ponds and streams, a temporary 50-foot buffer is required during construction. In any work near these bodies of water, the Applicant will install a buffer of minimal 50 feet to ensure proper standards are met. For rare resources defined in Sections 23 and 25 of the NPDES Permit, McCarthy Lake Fen would require a permanent 100-foot buffer to avoid impacts to the water resource,

The Applicant anticipates project activities will be covered under the Utility Regional General Permit for Section 404 wetland. The Project has been assigned a Regulatory File Number (No. MVP-2023-01630-RMH) and a USACE Project Manager for this Project. The MPCA has issued Section 401 Water Quality Certification for projects that meet the conditions of the Regional General Permit. Stipulations and conditions required under the Utility Regional General Permit will be integrated into the final project design plans. Permanent impacts to wetland resources will be mitigated through purchase of credits from a certified wetland bank at the ratio stipulated by the Regulatory Branch of the St. Paul District.

The Applicant will also coordinate with the Wabasha County Soil and Water Conservation District regarding WCA.

4.9.1.7. Floodplains

Floodplains are low-lying areas that are subject to periodic inundation due to heavy rains or snowmelt. Floodplain areas are generally found adjacent to lakes, rivers and streams. In their natural state, floodplains provide for temporary water storage during flooding events. According to FEMA Flood Hazard Zones, the APR will cross approximately 8,000 feet of Flood Hazard Zones (FIRM Panels 27157C0240D and 27157C0225D).[151] Floodplains are common occurrences outside alongside major river systems, such as the Mississippi River east of the APR.

Potential Impacts

ROI: ROW

Duration: Construction (Short term) and Operations (Long term)

Size: 8,000 feet of Flood Hazard Zones is crossed by the APR. No RSA crosses a Flood Hazard Zone.

Uniqueness: Floodplains are a very common geographic feature, particularly along river valleys.

Location: Flood Hazard Zones crossed by the APR starting at MP 9.4. and ending at the Kellogg Substation.

Context: Flood Hazard Zones will not likely be affected by an above ground transmission line, as the towers will be designed to withstand flooding.

The installation of the Xcel and Peoples distribution line would not indirectly affect floodplains, as the line would be buried and not cause an impediment to floodwaters.

Significance: Any work done within a Flood Hazard Zone will likely have little to no impact, as transmission lines will be above ground and will not displace any soil that would otherwise absorb flood water. Construction of the Kellogg Substation is expected to have negligible impacts on flooding.

Mitigation

The Applicant will obtain a Floodplain Permit from the DNR and will integrate all stipulations and requirements into the final project design and plans.

4.9.1.8. Soils

The Blufflands subsection of the Ecological Classification states that the loess thickness is variable and ranges from 30 feet thick on broad ridgetops to less than a foot on valley walls. The predominant soils are primarily upland soils formed in loess, residuum from underlying dolomitic and limestone bedrock, and glacial outwash soils west of the Mississippi River trench and silty alluvial soils along the valley floor of area streams and the Mississippi River (**Table 22**). Cambrian siltstones, sandstones, and shales influence soil properties.[152]

[151] FEMA Floodplain Mapper. Retrieved November 29, 2024, from https://www.fema.gov/flood-maps.

[152] MDNR. Big Woods Section. November 29, 2024, from https://www.dnr.state.mn.us/ecs/222Mb/index.html

Table 22. Summary of Soils.

Soil Association[153]	Summary[154]
Port Byron-Garwin (s3642)	The Port Byron-Garwin association unit consists of very deep, well drained soils on uplands and high terraces. These soils formed in loess and are found in uplands, terraces, and slightly concave heads of upland drainageways, interfluves on dissected till plains, and treads on stream terraces. Slopes range from 0 to 30%.
Seaton-Palsgrove-New Glarus (s3657)	The Seaton-Palsgrove-New Glarus association unit is characterized as very deep to deep, well drained soils that formed in dolostone, other limestone, coarse loess, or residuum formed from limestone. The soils are located on ridge tops and side slopes on uplands near the bluffs along the major valleys and on treads and risers on high stream terraces. Slopes range from 0 to 60%.
Seaton-Lamoille-LaCrescent-Elbaville (s3658)	The Seaton-Lamoille-LaCrescent-Elbaville association unit is characterized as very deep, well drained soils that formed in loess. The soils are located on shoulders, side slopes, foot slopes of dissected uplands near the bluffs along major valleys and on treads and risers on high stream terraces. Slopes range from 0-90%.
Waukegan-Sparta-Sartell-Kasota-Estherville-Dickman (s3590)	The Waukegan-Sparta-Sartell-Kasota-Estherville-Dickman association unit is characterized as very deep, well to excessively drained soils that formed in glacial outwash plains. The soils are located on concave to convex slopes on glacial outwash plains, valley trains, stream terraces, deltas, kames on moraines, and dune fields. Slopes range from 0 to 70%.
Shiloh-Comfrey (s3716)	The Shiloh-Comfrey association unit is characterized as very deep, poorly drained, or very poorly drained soils formed in silty or clayey sediments or loess or loamy alluvium on floodplains and alluvial fans. Slopes range from 0 to 2%.

[153] Minnesota Geospatial Commons General Soil Map. November 24, 2024, from https://gisdata.mn.gov/dataset/geos-statsgo2.
[154] NRCS. Web Soil Survey. November 29, 2024, from https://www.nrcs.usda.gov/resources/data-and-reports/official-soil-series-descriptions-osd.

Potential Impacts

ROI: Right-of-Way

Duration: Construction (Short term), Operation (Long term), and potentially Permanent

Size: Approximately 10 to 12 acres of soil could be impacted by the APR, RSAs, and Kellogg Substation.

Uniqueness: Soils are a common resource.

Location: Soils within the APR and RSAs are common soil types.

Context: Potential construction impacts are compaction of the soil associated with construction equipment traffic and exposing the soils to wind and water erosion. Soil compaction within wetlands would be mitigated by installation of construction mats. The restoration contractor would take measures to alleviate soil compaction where needed. Erosion and sediment control methods and BMPs will be used to minimize runoff during line construction. There should be no long-term impacts to soil resulting from transmission line construction. Permanent impacts to soil would be limited to areas associated with construction of the structures and the Kellogg Substation.

The installation of the Xcel and Peoples distribution line would not indirectly affect soils, as the line would be installed within the existing public ROW in areas previously disturbed during road construction.

Significance: Impacts are expected to be minor along the transmission line and moderate to significant at the Kellogg Substation.

Mitigation

Erosion and sediment control methods and BMPs will be utilized to minimize runoff during line construction. BMPs may include – but are not limited to – the installation of sediment barriers (silt fence, straw bales, bio-logs), filter socks, mulch, upslope diversions, and slope breakers. Disturbed areas will be restored to their original condition to the extent practicable. A VMP has been developed for this Project during the development of the RPA.[155]

4.9.1.9. Vegetation

Vegetation can be generally characterized using the Ecological Classification System.[156] The system was developed by the DNR and U.S. Forest Service for ecological mapping and landscape classification. The top three tiers of the system consist of Province, Section, and Subsection. The Project falls in the Eastern Broadleaf Forest Province, Paleozoic Plateau Section, and Blufflands subsection.

The Eastern Broadleaf Forest Province serves as a transition, or ecotone, between semi-arid portions of the state that were historically prairie and semi-humid mixed conifer-deciduous

[155] Measures to mitigate soil erosion are standard conditions are presented in Section 6.2 of the draft route permit
[156] MDNR. Ecological Classification System. Retrieved November 14, 2024, from https://www.dnr.state.mn.us/ecs/index.html.

forests to the northeast. The western boundary of the province in Minnesota is sharply defined along much of its length as an abrupt transition from forest and woodland to open grassland.[157]

The Paleozoic Plateau Section is a rugged region of bluffs and valleys that was originally a plateau underlain by flat-lying sedimentary rocks of the Paleozoic Era; however, in the past 10,000 years the landscape has been highly eroded and dissected by tributary streams and rivers to the Mississippi River, such as the Root, Whitewater, Zumbro, and Cannon rivers, as well as and their predecessors. The most important factors influencing the pattern of vegetation in the historical landscape were slope, aspect, flooding, and the likelihood of burning. Prairies occupied the flat, fire-prone remnants of the plateau in the western part of the section. Steep slopes in dissected areas protected the landscape from fire, which allowed dry prairies to form on the tops of southwest- facing bluffs and oak woodlands to develop downslope and northward and eastward along the slopes.[158]

The Blufflands subsection further details the flora that is characteristic of the Project area. Pre-settlement vegetation was comprised of tallgrass prairie and bur oak savanna on ridge tops and dry upper slopes. Red oak-white, oak-shagbark, and hickory-basswood forests were present on moister slopes, and red oak-basswood-black walnut forests in protected valleys. Prairies were restricted primarily to broader ridge tops, where fires could spread, but also occurred on steep slopes with south or southwest aspects. The current vegetation and land use is partially made up of cropland (30 percent) and pasture (20 percent). The remaining 50 percent of the subsection is woodland. [159]

Through the Minnesota Biological Survey (MBS), DNR systematically collects, interprets, and delivers baseline data on the distribution and ecology of rare plants, rare animals, NPC classes, and functional landscapes and designates sites which exhibit these characteristics as a Site of Biological Significance (SOBS). MBS sites established by the DNR are then ranked as follows:

- **Outstanding** – Sites contain the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most ecologically intact or functional landscapes.
- **High –** Sites contain very good quality occurrences of the rarest species, high-quality examples of rare native plant communities, and/or important functional landscapes.
- **Moderate –** Sites contain occurrences of rare species moderately disturbed native plant communities, and/or landscapes that have strong potential for recovery of native plant communities and characteristic ecological processes.
- **Below –** Sites lack occurrences of rare species and natural features or do not meet MBS standards for outstanding, high, or moderate rank.

[157] MDNR. Eastern Broadleaf Forest Province. Retrieved November 14, 2024, from https://www.dnr.state.mn.us/ecs/222/index.html.
[158] MDNR. Paleozoic Plateau Section. Retrieved November 14, 2024, from https://www.dnr.state.mn.us/ecs/222L/index.html.
[159] MDNR. Bluffsland Section. Retrieved November 14, 2024, from https://www.dnr.state.mn.us/ecs/222Lc/index.html.

The APR crosses one MBS site known as "McCarthy Lake" (ranked as High) for approximately 440 feet between MPs 12.8 and 12.9. Because this is a wetland MBS site, it may qualify as an RNC following review by DNR. All the alternative routes also cross the McCarthy Lake MBS site. RSA-GAA-1 and RSA-GAA-2 cross the northern section of an MBS site known as "Snake Creek Bluffs South" (ranked as Moderate) for approximately 2,520 feet and a MBS site known as "Snake Creek Bluffs North" (ranked as Below) for approximately 620 feet. There are no other MBS sites within the APR or all other RSAs.

There are no NPCs within the APR. RSA-GAA-1 and RSA-GAA-2 intersect the edge of one NPC (ranked as Moderate) – a Red Oak – White Oak Forest within the Snake Creek Bluffs South MBS site. There are no other NPCs within the APR or other RSAs.

There are no other designated areas within the APR or RSAs that are associated with rare flora communities, such as DNR SNAs, Native Prairies, or Railroad ROW Prairies.[160]

The movement of construction equipment to, from, and between various work sites may introduce and/or spread invasive species. Terrestrial plant invasive and noxious species in Minnesota are regulated by the Minnesota Department of Agriculture (MDA), and aquatic invasive and noxious species are regulated by the DNR.[161],[162] The DNR also manages terrestrial plant invasive and noxious species on public lands and at public waters. The DNR maintains a geospatial dataset of terrestrial invasive and noxious species observations; according to this dataset, wild parsnip (*Pastinaca sativa*), an MDA control species, has been documented at several locations along State Highway 42 and along County Road 84.[163]

Potential Impacts

ROI: Right-of-Way

Duration: Construction (Short term), Operation (Long term), and Permanent

Potential Impacts: Potential impacts to vegetation could include clearing, grading, grubbing, and trenching needed to install poles and construct substation. In areas where the new transmission line would be located adjacent to an existing ROW (roadways, pipelines, electrical distribution lines), potential impacts would largely be limited to one side of the ROW and would not create newly fragmented areas. Impacts related to the permanent conversion of forest vegetation to low-stature open vegetation are expected in areas where new or expanded ROW would be created and less so where it parallels and is adjacent to an existing ROW. Because most of the APR and RSA-A through RSA-F will primarily follow existing road and distribution line corridors or be in agricultural fields (which will minimize impacts to previously undisturbed

[160] Minnesota Geospatial Commons. MCBS Railroad Rights-of-Way Prairies - Resources. Retrieved December 28, 2024, from https://gisdata.mn.gov/dataset/biota-mcbs-railroad-prairies.
[161] Minn. Stat. § 18.75-18.913
[162] MDNR. Invasive Species. Retrieved December 4, 2024, from https://www.dnr.state.mn.us/invasives/index.html.
[163]Minnesota Geospatial Commons. Terrestrial Invasive Species Observations. Retrieved November 31, 2024, from https://gisdata.mn.gov/dataset/env-invasive-terrestrial-obs.

vegetation), minimal impacts to native vegetation are anticipated. The APR from MP 8.5 through MP 10.5 and RSA-G would require some-level of clearing of upland and riparian forested areas.

Construction of any transmission line could lead to the introduction or spread of noxious weeds or other invasive species. Construction activities that could potentially lead to introduction of noxious weeds and invasive species include ground disturbance that leaves soils exposed for extended periods, introduction of topsoil contaminated with weed seeds, vehicles importing weed seed from a contaminated site to an uncontaminated site, and through conversion of landscape type, particularly from forested to open settings.

Noxious weeds have potential to dominate and displace native plants and plant communities, permanently altering ecosystem functions. In Minnesota, noxious weeds are managed at the state level through the Minnesota Department of Agriculture (MDA), which administers the Minnesota Noxious Weed Law. The MDA lists four categories of noxious weeds with differing levels of eradication, control, reporting, transport, sales, and propagation requirements. There are 12 weeds on the eradicate list, eight on the control list, five restricted species, and four specially regulated plants. Prohibited noxious weeds are well documented to be detrimental and disruptive to human or animal health, the environment, public roads, crops, livestock, or other property. None of the plants on these lists is to be transported, propagated, or sold in the state. Weeds on the list include annual, biennial, and perennial plants. Counties may create and administer their own lists of noxious weeds; however, the counties across the proposed Project have not listed any species or rules above and beyond the MDA noxious weed lists.

The Applicant would routinely clear woody vegetation from the transmission line ROW to maintain low-stature vegetation that would not interfere with the transmission line. Maintenance and emergency repair activities could result in direct impacts on vegetation from removal of vegetation, localized physical disturbance, and compaction caused using equipment. Maintenance and emergency repair-related impacts on vegetation would be short-term and more focused than construction-related impacts.

Size: Project area

Uniqueness: RSA-GAA-1 and RSA-GAA-2 intersect the edge of one NPC (ranked as Moderate) – a Red Oak – White Oak Forest within the Snake Creek Bluffs South MBS site. There are no other NPCs within the APR or other RSAs.

Location: The APR contains no NPCs or other areas associated with areas containing rare flora communities. RSA-GAA1 and RSA-GAA2 intersect the edge of a moderate NPC, a Red Oak – White Oak Forest. No other areas of rare flora communities, such as DNR SNAs, Native Prairies, or Railroad ROW Prairies, have been identified within the ROW of the APR or RSAs.[164] The majority of impacted vegetation for the APR is roadside vegetation along state and county roadways and vegetation from cultivated crops in agricultural fields. There will be some forested areas impacted near MP 8 and MP 10.5.

[164] Minnesota Geospatial Commons. MCBS Railroad Rights-of-Way Prairies. Retrieved December 14, 2024, from https://gisdata.mn.gov/dataset/biota-mcbs-railroad-prairies.

Context: Some unavoidable and irretrievable impacts associated with forest clearing and maintenance may occur. The APR and RSAs will primarily follow existing road corridors or would be located in agricultural fields, which will minimize impacts to previously undisturbed vegetation in that area. The Applicant will clear approximately 14.4 acres of trees within the 100-foot-wide ROW associated with the APR. RSA-GAA-2's ROW intersects 0.0 acres of the Red Oak-White Oak forest, but is only 80 feet southeast of the ROW, which could mean interception with the Red Oak-White Oak forest. The Applicant has also developed a VMP for this Project.

The installation of the Xcel and Peoples distribution line would not indirectly affect vegetation, as the line would be installed within the existing public ROW in areas previously disturbed during road construction and regularly maintained through spraying and mowing.

Significance: Impacts are expected to be negligible for most of the APR, RSA-A through RSA-H, and the Kellogg Substation. Impacts along the APR from MP 8.5 to MP 9.5 and along RSA-GAA-1 and RSA-GAA-2 are expected to be moderate to significant.

Mitigation

The Applicant will manage documented occurrences of terrestrial plant invasive and noxious species that are listed as "eradicate" or "control" under the "Prohibited Noxious Weed" category by the MDA.[165],[166] Further, the Applicant will adhere to the requirements set forth by the DNR Utility License to Cross Public Waters and Natural Heritage Review consultation process. In its RPA, the Applicant proposes to implement the following BMPs during construction to minimize the potential for the introduction or spread of terrestrial plant invasive and noxious species:

- Limiting grading and excavation to areas surrounding pole structure foundations, and only as needed along access roads and workspace areas for a level and safe working area.
- Installing construction mats for travel lanes in wetlands and other specific locations.
- Installation and maintenance of a buffer between the Project and MBS sites.
- Confine construction to the side opposite of the BMS site. If not feasible, restrict construction to existing road rights-of-way
- Minimize vehicle disturbance in the area, avoiding parking and stockpiling within the area.
- All disturbed areas will be revegetated using "Noxious Weeds; None Found" seed mixes.
- All disturbed areas will be revegetated using seed mixes labelled "Noxious Weeds; None Found" in accordance with regulations and will utilize yellow tag seed when

[165][165] Prohibited noxious weeds placed on the noxious weed eradicate list are plants that are not currently known to be present in Minnesota or are not widely established. These species must be eradicated. This list is available at: https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list.

[166] Prohibited noxious weeds placed on the noxious weed control list are plants that are already established throughout Minnesota or regions of the state. Species on this list must be controlled (Minn. Stat. § 18.771 (b)(1)). This list is available at: https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list.

available.

- Compliance with MPCA Construction Stormwater General Permit, including stabilization requirements, and inspection, maintenance and repair of erosion and sediment control BMPs. Certified weed-free straw or weed-free hay will be used for erosion and sediment control BMPs.
- All construction equipment must be clean prior to entering and before leaving the work site.
- Manual, mechanical, or chemical management of invasive and noxious weed infestations.
- The Construction Field Representative will oversee BMP installation and effectiveness.

The Applicant has also developed a VMP for this Project that will incorporate these BMPs. They will not conduct activities within waterbodies; therefore, no mitigation to manage aquatic invasive and noxious species are proposed.

The APR would be co-located with County Road 84 at the McCarthy Lake MBS crossing. Temporary impacts to the MBS site will occur during construction activities. To minimize impacts to this MBS site, the Applicant has developed the following BMPs:

- Use construction mats to minimize ground disturbance;
- Prohibit park equipment, stockpile supplies, or place spoil within the MBS site;
- Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species;
- Use effective erosion and sediment control BMPs;
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible; and
- Use only certified weed-free mulches and seed mixes.

Further, the Applicant will avoid placement of pole structures within the MBS site by spanning this area and will minimize forested vegetation clearance by collocating with the road ROW.

4.9.1.10. Wildlife

The Project is located in the DNR Nongame Wildlife – Central Region.[167] The Central Region provides habitat for non-game species such as tundra swans during migratory periods, red-headed woodpeckers, raptors, trumpeter swans, mice, turtles, frogs, and snakes. Additional species that inhabit the Project area include deer, small game, forest upland birds, pheasants, waterfowl, turkey, and doves.

[167] MDNR. Nongame Animals. Retrieved December 2, 2024, from https://www.dnr.state.mn.us/eco/nongame/central.html.

Neither the APR nor any of RSAs cross any DNR WMAs.[168] The closest DNR WMA is the McCarthy Lake WMA, which is located approximately 0.2 miles south of the APR near MP 11.3. No RSAs are located close to the McCarthy Lake WMA. RSA-GAA-1 and RSA-GAA-2 cross over portions of the RJD Memorial State Hardwood Forest. The USFWS National Realty tract data indicates the Upper Mississippi River National Wildlife and Fish Refuge is located approximately 265 feet northeast of the Kellogg Substation. This area is also designated as an Important Bird Area. No USFWS-administered properties are located in or are crossed by the APR and RSAs.

Potential Impacts

ROI: ROW

Duration: Construction (Short term), Operation (Long term), and Decommissioning (Long term)

Potential Impacts: Construction activities that generate noise, dust, or disturbance of habitat may result in short-term indirect impacts on wildlife. During construction of the proposed Project, wildlife would be displaced within the anticipated ROW. These impacts are expected to be short-term and limited in scope. Common species habituated to human presence may continue to use habitats adjacent to the ROW during construction.

Project construction may result in long-term adverse impacts on wildlife from the loss or conversion of habitat and habitat fragmentation. The proposed Project would expand an existing cleared corridor, which may convert some areas from forest and shrub land to low stature vegetation. The Applicant would permanently clear woody vegetation within the anticipated ROW by widening an existing ROW. Wildlife species previously occupying forested communities in the ROW would be displaced in favor of species that prefer more open vegetation communities. Impacts are expected to be incremental and limited to situations where an existing ROW is expanded.

The conversion of vegetation cover types alters species' usage by changing the composition and structure of plant communities. When forested plant communities are converted to open communities, there are corresponding changes in wildlife communities. Species that rely on well-developed forest canopies for nesting, foraging, or shelter are displaced from the portion of the landscape where this alteration occurs. Species that rely on shrubby or grassland habitats may be less susceptible to and may even benefit under alterations associated with transmission lines because they would undergo fewer changes in vegetation community structure and environmental factors, such as light intensity.

Habitat fragmentation reduces the size of continuous blocks of vegetation (such as forest), which reduces the total area of habitat available to wildlife species and increases the isolation of the habitat. Opportunistic and adaptable animals often succeed in highly fragmented habitats. Non-native invasive or pioneering plant species may encroach where disturbance provides a competitive advantage and an avenue of introduction, such as where habitat fragments occur. The alteration of plant community composition and structure can adversely affect those species that rely on the presence of certain plant species or vegetative cover. Fragmentation effects are

[168] MDNR. Recreation Compass. Retrieved December 2, 2024, from https://www.dnr.state.mn.us/maps/compass/index.html.

greatest when large, continuous areas are broken up into smaller patches that reduces interior forest habitat necessary for some species such as songbirds. The effects would generally be greatest where new corridor is created, rather than where the transmission line expands or parallels existing infrastructure ROWs (roadways and electrical transmission/distribution lines).

The Applicant would routinely maintain the ROW to support low-stature non-woody vegetation; emergency repairs may require additional vegetation clearing. Operation, maintenance, and emergency repair activities may have long-term indirect impacts on wildlife, 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 limited into the ROW.

Increased risk of avian collisions and potential electrocution with transmission conductors and equipment is possible with the development of all transmission lines. Electrocution occurs when an arc is created by contact between a bird and energized lines or an energized line and grounded structure equipment. Electrocution occurs more frequently with larger bird species (such as hawks), as they have wider wingspans that are more likely to create contact with the conductors.

Size: Project area

Uniqueness: Common

Location: Common throughout Project area.

Context: There is minimal potential for the displacement of wildlife and loss of habitat from construction of the Project. Wildlife that inhabits natural areas could be impacted in the short-term within the immediate area of construction. The distance that animals will be displaced will depend on the species. Additionally, these animals will be typical of those found in agricultural and forested settings and should not incur population level effects due to construction. Impacts and mitigation regarding federal and state-listed species are discussed in **Section 4.9.1.11**.

Raptors, waterfowl, and other bird species may be affected by the construction and placement of the transmission lines. Avian collisions are a possibility after the completion of the transmission lines. Waterfowl are typically more susceptible to transmission line collision, especially if the transmission line is placed between agricultural fields that serve as feeding areas, or between wetlands and open water, which serve as resting areas.

The APR and RSAs will primarily follow existing road corridors or would be located in agricultural fields, which will minimize impacts to previously undisturbed vegetation in that area. The Applicant will clear approximately 14.4 acres of trees within the 100-foot-wide ROW associated with the APR. The Applicant would have to clear additional timber for some of the RSAs. The acres to be cleared are discussed in **Section 4.7.2**, with RSA-GAA1 and RSA-GAA2 requiring the most acres removed at 8.1 acres. The Applicant has also developed a VMP for this Project.

The installation of the Xcel and Peoples distribution line would not indirectly affect wildlife, as the line would be installed within the existing public ROW.

Significance: Impacts to wildlife are expected to be negligible to minor, short-to-long term, and limited to the ROW.

Mitigation

Project design and construction will be done in accordance with Avian Power Line Interaction Committee (APLIC) guidelines.[169] Any eagle or other migratory bird nests discovered during survey of the line or in the land acquisition process will be reported to the USFWS, and the Applicant will adhere to guidance provided.

4.9.1.11. Rare and Unique Natural Resources

The Applicant's consultant submitted a formal Minnesota Natural Heritage Review Request (2023-00935) on December 13, 2023, through the DNR's Minnesota Conservation Explorer (MCE), and provided an update on December 14, 2023. The DNR's December 18, 2023, early coordination letter confirmed this submittal and noted that a manual Natural Heritage review was required by the DNR due to the presence of rare features and state-listed species within the vicinity of the APR (**Appendix E**). A third request was submitted on October 18, 2024, for areas crossed by the RSAs developed as part of project scoping. As with the initial review, a manual review is required due to the presence of rare features and state-protected species in these areas.

In addition, the USFWS Information for Planning and Consultation (IPaC) website was used to obtain a list of federally threatened and endangered species, candidate species, and designated critical habitat that have been previously documented within the vicinity of the APR and all other alternative routes.[170]

Ecologically Significant Areas

The Minnesota Biological Survey (MBS) identified two ecologically significant areas close to the assessment area: McCarthy Lake and Snake Creek Bluffs South.[171]

McCarthy Lake (ID# 31975) is a documented calcareous fen reported in the vicinity of the Project Area (see Section 4.9.6). Minn. Stat. 103G.223 states that calcareous fens may not be filled, drained, or otherwise degraded – in total or partially – by any activity except for those provided in a management plan approved by the DNR Commission. Calcareous fens may be impacted by activities within the fen, by activities which affect surface water flows, or by activities that impact groundwater hydrology. McCarthy Lake is located north of the ROW near MP 11.0.

The Snake Creek Bluffs South is identified as a site of *Moderate* Biodiversity Significance, which contains varying levels of native biodiversity. MBS sites ranked as Moderate contain: 1) occurrences of rare species; 2) moderately disturbed native plant communities; and/or 3) landscapes that have a strong potential for recovery and restoration. This MBS site contains a Red Oak-White Oak Forest (MHs37a) native plan community within RSA-GAA2's path. This community is considered vulnerable to extirpation within Minnesota.

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[169] Natural Resource Conservation. Suggested Practices for Avian Protection on Power Lines. Retrieved December 2, 2024, from https://www.nrc.gov/docs/ML1224/ML12243A391.pdf.
[170] USFWS. Interagency Planning and Consultation. Retrieved November 21, 2024, from https://ecos.fws.gov/ipac/.
[171] MDNR. National Heritage Inventory. Retrieved November 14, 2024, from https://files.dnr.state.mn.us/eco/mcbs/maps/wabasha.pdf

Another area considered by the MBS is the Snake Creek Bluffs North. It was determined to be below the minimum criteria for statewide significance. This area still may contain habitat that has conservation value for native plants and animals. Construction impacts should still be considered during project planning, design and implementation.

State-Protected Species

The DNR Natural Heritage Inventory System (NHIS) data was queried by the Applicant's consultant for the APR through License agreement LA 1066 on December 14, 2023, and October 21, 2024. EOR updated the query for the APR and RSAs on November 20, 2024, through License agreement 2023-054. DNR recommends that the Applicant evaluate NHIS records for state-listed species within 1 mile of potential impacts. **Appendix E** contains letters from the NHIS MDNR concerning the Project.

No NHIS records are recorded within RSAs outside of the 1 mile buffer for the APR. Species within 1 mile of the APR that are listed as special concern are provided in **Table 24**. Species of special concern are considered state-listed but are not legally protected and are not described.

Table 23. Special Concern Species.

Common Name	Scientific Name	State Status
A Jumping Spider	*Pelegrina arizonensis*	Special Concern
A Jumping Spider	*Phidippus apacheanus*	Special Concern
A Jumping Spider	*Habronattus viridipes*	Special Concern
A Jumping Spider	*Sassacus papenhoei*	Special Concern
American Eel	*Anguilla rostrata*	Special Concern
Bell's Vireo	*Vireo bellii*	Special Concern
Black Sandshell (mussel)	*Ligumia recta*	Special Concern
Blue Sucker	*Cycleptus elongatus*	Special Concern
Cattail Sedge	*Carex typhina*	Special Concern
Creeping Juniper	*Juniperus horizontalis*	Special Concern
Goat's Rue	*Tephrosia virginiana*	Special Concern
Gophersnake	*Pituophis catenifer*	Special Concern
Gray's Sedge	*Carex grayi*	Special Concern

Common Name	Scientific Name	State Status
Green Dragon	*Arisaema dracontium*	Special Concern
Kentucky Coffee Tree	*Gymnocladus dioica*	Special Concern
Lake Sturgeon	*Acipenser fulvescens*	Special Concern
Lark Sparrow	*Chondestes grammacus*	Special Concern
Leonard's Skipper	*Hesperia leonardus leonardus*	Special Concern
Mississippi Silvery Minnow	*Hybognathus nuchalis*	Special Concern
Muskingum Sedge	*Carex muskingumensis*	Special Concern
North American Racer	*Coluber constrictor*	Special Concern
Old Field Toadflax	*Nuttallanthus canadensis*	Special Concern
Plains Hog-nosed Snake	*Heterodon nasicus*	Special Concern
Plains Wild Indigo	*Baptisia bracteata var. glabrescens*	Special Concern
Red-shouldered Hawk	*Buteo lineatus*	Special Concern
Regal Fritillary	*Argynnis idalia*	Special Concern
Rhombic Evening Primrose	*Oenothera rhombipetala*	Special Concern
Round Pigtoe (mussel)	*Pleurobema sintoxia*	Special Concern
Swamp White Oak	*Quercus bicolor*	Special Concern
Yellow Pimpernel	*Taenidia integerrima*	Special Concern
Yellow-fruit Sedge	*Carex annectens*	Special Concern

Threatened and Endangered species identified during the NHIS-data queries are provided below (**Table 24**).

Table 24. State Threatened and Endangered Species.

Common Name	Scientific Name	State Status
Beach Heather	*Hudsonia tomentosa*	Threatened
Blanding's Turtle	*Emydoidea blandingii*	Threatened
Butterfly (mussel)	*Ellipsaria lineolate*	Threatened
Clasping Milkweed	*Asclepias amplexicaulis*	Threatened
Davis' Sedge	*Carex davisii*	Threatened
Fawnsfoot (mussel)	*Truncilla donaciformis*	Threatened
Monkeyface (mussel)	*Theliderma metanevra*	Threatened
Mucket (mussel)	*Actinonaias ligamentina*	Threatened
Seaside three-awn	*Aristida tuberculosa*	Threatened
Spike (mussel)	*Eurynia dilatate*	Threatened
Timber Rattlesnake	*Crotalus horridus*	Threatened
Wood Turtle	*Glyptemys insculpta*	Threatened
Crystal Darter	*Crystallaria asprella*	Endangered
Ebonyshell (mussel)	*Reginaia ebenus*	Endangered
Pallid Shiner	*Hybopsis amnis*	Endangered
Pistolgrip (mussel)	*Tritogonia verrucosa*	Endangered

Beach Heather

Beach Heather is a low mat-forming evergreen shrub, typically about ankle high. In Minnesota, they occur on high and sandy beaches of large lakes, but most often, they are found on active sand dunes that are not directly associated with lakes. If dune blowouts are not kept open by wind, they become overgrown by grasses and other plants, and the beach heather will disappear. On active dunes, beach heather can become nearly buried by blowing sand, but it produces new roots along the buried portions of the stem, allowing it to continue to grow

upwards.[172] According to DNR records, potential habitat and occurrences are reported in the Project area.

Blanding's Turtle

The Blanding's Turtle averages 5.9 to 9.8 inches in length and has a domed upper shell with bright yellow chin and throat. These turtles prefer calm, shallow waters, including wetlands associated with rivers and streams with rich aquatic vegetation. Blanding's turtles typically overwinter in muddy bottoms of deep marshes, backwater pools, ponds, and streams. Small, temporary wetlands are frequently used by Blanding's turtles in spring and early summer when these habitats provide basking sites and mating opportunities. Nesting occurs in sparsely vegetated uplands with well- drained, sandy soils.[173] Females often nest in agricultural fields and may travel up to 1 mile overland from resident wetland habitat to upland nesting sites. Suitable habitat for the Blanding's turtle is present within the APR and all route alternatives. According to DNR records, potential habitat and occurrences are reported in the Project area.

Butterfly Mussel

The Butterfly Mussel has a triangular shell up to 5 inches long. The butterfly mussel usually inhabits areas of large rivers with swift currents in sand or gravel substrates but can be found in reservoirs in some southern states. Butterfly mussels spend most of their lives buried in the bottom sediments of permanent waterbodies, and often live in multi-species communities called mussel beds.[174] Suitable habitat for butterfly mussels is not present within the APR or all other RSAs.

Clasping Milkweed

Clasping Milkweed is a perennial plant reaching 1.6 feet in height and has large opposite leathery leaves. In Minnesota, clasping milkweed occurs exclusively in dry, sandy, and sparsely vegetated soil in savannas, upland prairies, and requires full sunlight and minimal competition from other perennials. Clasping Milkweed requires that the original open conditions of savannas or upland prairies be maintained or recreated, preferably with a program of controlled burns conducted in early spring before the plants have emerged from winter dormancy.[175] Suitable habitat for the clasping milkweed is not present within the APR. RSA-GAA-1 and RSA-GAA-2 [map reference] include steep south facing slopes within the Snake Creek Bluffs South and Snake Creek Bluffs North site which may support prairie habitat in the past, although these areas appear to be heavily wooded at present. According to DNR records, potential habitat and occurrences are reported in the Project area.

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[172] MDNR. Beach Heather. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PDCIS03030.
[173] MDNR. Blanding's Turtle. Retrieved November 26, 2024, fromhttps://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ARAAD04010.
[174] MDNR. Butterfly Mussel. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV13010.
[175] MDNR. Clasping Milkweed. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PDASC02020#:~:text=The%20flowers%2 0are%20green%2C%20with,the%20axils%20of%20the%20leaves.

Davis' Sedge

Davis' Sedge is a grass-like perennial herb of forested floodplains and swamps in the Midwest and east-central states. All Minnesota Davis' sedge populations occur in mature alluvial forests associated with major river valleys of the Mississippi River drainage in the southeastern corner of the state and seems to be restricted to floodplain zones that are inundated by only the highest flood events. Davis' Sedge has not been recorded in areas that remain inundated for weeks at a time.[176] According to DNR records, potential habitat and occurrences are reported in the Project area.

Fawnsfoot Mussel

Fawnsfoot Mussel is a small mussel with a stout elliptical shell that typically inhabits flowing waters of permanent large rivers or lakes, buried in sediments. In Minnesota, the Fawnsfoot occurs in flowing areas of large rivers in soft or coarse substrate, and they have been found at depths up to 30 feet.[177] Suitable habitat for Fawnsfoot is not present within the assessment area.

Monkeyface Mussel

Monkeyface Mussel is a mussel with a shell squarish in shape that can reach up to 5 inches long. Monkeyface mussels are typically found in the St. Croix River in stable substrates in water over 6.6 feet deep and are very rarely found in the Mississippi River. They spend most of their lives buried in the bottom sediments of permanent waterbodies, and often live in multi-species communities called mussel beds.[178] Suitable habitat for the Monkeyface is not present within the APR or all RSAs.

Mucket Mussel

Mucket Mussel is a mussel with an oblong shell that can reach up to 6 inches long. The mucket mussel is known to inhabit medium to large rivers, substrates that are most preferred include coarse sand and gravel. They spend most of their lives buried in the bottom sediments of permanent waterbodies, and often live in multi-species communities called mussel beds. Mucket mussels are now common only in the St. Croix River and some of its tributaries and occurs in low densities in the Mississippi River.[179] Suitable habitat for the Mucket Mussel is not present within the assessment area.

Seaside Three-awn

Seaside Three-awn is a small-tufted grass, averaging about 12 inches tall, with lateral branches arising from the lower portion of the stem. It occurs in a relatively small number of very small

[176] MDNR. Davis Sedge. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PMCYP033G0.
[177] MDNR. Fawns Foot. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV45020#:~:text=In%20Minnesota% 2C%20the%20Fawnsfoot%20occurs,range%20has%20expanded%20above%20St.
[178] Monkeyface Mussel. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV39080.
[179] MDNR. Seaside Three-awn. https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV01020.

and isolated prairie and savanna habitats in the southeastern part of the state. These habitats are fragile and easily converted to agricultural, commercial, recreational, or residential uses. According to DNR records, potential habitat and occurrences are reported in the Project area.

Spike Mussel

Spike Mussel is a mussel with an elongate shell that can reach up to 6 inches long. Spike mussels are usually found in small to large rivers, but they are also known to inhabit reservoirs and lakes. They are most often found in sand and gravel substrates in depths ranging from 2 to 24 feet and are usually associated with outlet habitats dominated by swift currents. Spike Mussel is now common only in the St. Croix River and its tributaries, Rose Creek, and at the outlet of Lake Pepin on the Mississippi River.[180] Suitable habitat is not present within the assessment area.

Timber Rattlesnake

The Timber Rattlesnake is a large snake, averaging 31.5 to 48.0 inches in length. In Minnesota, the ideal habitat for timber rattlesnakes includes forested bluffs, south-facing rock outcrops, and bluff prairies, particularly in the Mississippi River valley. Bluff prairies located on steep, south or west- facing hillsides, with rock outcroppings and ledges, are essential habitat components because over-wintering dens are often located in these areas. Surrounding forests, prairies, and agricultural lands are used as summer feeding grounds. Two necessary habitat components for this species are open areas for thermoregulation and dens for over-wintering.[181] Suitable ideal habitat for Timber Rattlesnakes is not present within the assessment area, but suitable summer feeding grounds are present within the APR and RSA-GAA-1 and RSA-GAA-2.

Wood Turtle

The Wood Turtle averages 5.5 to 8.0 inches in length and its shell is comprised of individual plate-like scales. The wood turtle preferring small- to medium-sized, fast-moving rivers and streams with adjacent deciduous and coniferous forests. The substrates of wood turtle streams typically consist of sand or gravel. Wood turtles will occupy adjacent alder thickets, forest, grassland habitat, and agriculture fields for basking and foraging. Sandy, sparsely vegetated areas that are not prone to flooding and have ample exposure to direct sunlight provide important nesting sites.[182] According to DNR records, potential habitat and occurrences are reported in the Project area.

Crystal Darter

Crystal darters can reach up to 6.3 inches long and are pale yellow, slender, and have four to eight dark side bars, often connected to four dark saddles across the back. In Minnesota, Crystal darters occur in medium to large rivers, usually with clean sand and gravel bottoms and

[180] MDNR. Spike Mussel. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV14100.
[181] MDNR. Timber Rattle Snake. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ARADE02040.
[182] MDNR. Wood Turtle. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ARAAD02020.

moderate to swift currents.[183] Suitable habitat for the Crystal Darter is not present within the assessment area.

Ebonyshell Mussel

The Ebonyshell Mussel is a mussel that has a round shell reaching up to 4 inches long. The Ebonyshell Mussel primarily inhabits large rivers in sand or gravel. Ebonyshell mussels live buried in the bottom sediments of permanent waterbodies, and often live in multi-species communities called mussel beds. In Minnesota, the Ebonyshell Mussel is presently restricted to the lower St. Croix River above Lakeland and at Prescott.[184] Suitable habitat for the Ebonyshell Mussel is not present within the assessment area.

Pallid Shiner

Pallid Shiner is a small, slender minnow that reaches a maximum total length of about 2.6 inches. Pallid shiners inhabit large- and medium-sized rivers and occasionally streams, often at the downstream ends of sand and gravel bars. In Minnesota, pallid shiners have been found in the St. Croix and Mississippi Rivers.[185] Suitable habitat for the Pallid Shiner is not present within the assessment area.

Pistolgrip Mussel

Pistolgrip Mussel is a mussel with an elongated shell reaching 8 inches long. They spend most of their lives buried in the bottom sediments of permanent waterbodies and often live in multi-species communities called mussel beds. In Minnesota, the Pistolgrip Mussel is most often found inhabiting larger rivers in areas with moderate current and gravel substrates, the best remaining populations are in the lower St. Croix River.[186] Suitable habitat for the Pistolgrip Mussel is not present within the assessment area.

Federally Protected Species

Based on the official species list provided by the USFWS, five species federally listed under Endangered Species Act (ESA), one species proposed for listing, and one candidate species has been previously documented within the vicinity of the APR and RSA (**Table 25**). Species and suitable habitat descriptions are provided below, including an assessment if suitable habitat is present within the APR and all other PAR. No federally designated critical habitat is present within the assessment area.

[183] MDNR. Crystal Darter. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AFCQC01010.
[184] MDNR. Ebonyshell Mussel. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV17060#:~:text=The%20ebonyshell %2MDNR. Ebonyshell Mussel. 0was%20originally%20listed,an%20endangered%20species%20in%201996.
[185] MDNR. Pallid Shiner. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AFCJB15010#:~:text=Conservation%20% 2F%20Management,to%20impacts%20from%20human%20activities.
[186] MDNR. Pistolgrip Mussel. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IMBIV44010.

Table 25. Federally Protected Species.

Common Name	Scientific Name	Federal Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Rusty Patched Bumble Bee	*Bombus affinis*	Endangered
Higgins Eye Pearlymussel	*Lampsilis higginsii*	Endangered
Sheepnose Mussel	*Plethobasus cyphyus*	Endangered
Spectaclecase (mussel)	*Cumberlandia monodonta*	Endangered
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered
Monarch Butterfly	*Danaus plexippus*	Candidate

Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are not legally protected under the ESA or in the state of Minnesota. However, the Bald and Golden Eagle Protection Act (BGEPA) protects and conserves bald and golden eagles from take of an individual bird, chick, egg, or nest, including alternate and inactive nests. BGEPA prohibits disturbance that may lead to biologically significant impacts, such as interference with feeding, sheltering, roosting, and breeding or abandonment of a nest. Bald eagle breeding pairs may have more than one nest and may alternate use of these nests from year to year. Bald eagles may roost communally during migration, winter, and summer.[187] Suitable nesting habitat for bald eagles is present within and near the APR and all proposed alternative routes. The disturbance distance for active bald eagle nests is 660 feet.[188]

Northern Long-eared Bat

The range of the Northern Long-eared Bat (NLEB) stretches across much of the eastern and midwestern United States. During summer, the bats roost singly or in colonies under bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places such as caves and mines. This species is thought to be opportunistic in selecting roosts, using tree species based on the tree's ability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures such as barns and sheds. In winter, NLEBs use caves and mines as hibernacula.[189] Suitable habitat for the NLEB is present within the APR, RSA-B, RSA-GAA-1, and RSA-GAA-2.

[187] MDNR. Blad Eagle. Retrieved November 26, 2024, from https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ABNKC10010.
[188] USFWS. Bald Eagle. Retrieved November 26, 2024, from https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf.
[189] USFWS. Northern Long-eared Bat. Retrieved November 26, 2024, from https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis.

Rusty Patched Bumble Bee

The Rusty Patched Bumble Bee (RPBB) is a medium-sized bumble bee; workers and males are characterized by a rusty-colored patch located centrally on the second abdominal segment. Queens lack the species' eponymous rusty patch and can be further distinguished from workers and males by their large size.

Suitable habitat for the RPBB includes grasslands, prairies, marshes, agricultural areas, woodlands, residential parks, and gardens. The species is a generalist forager and utilizes both pollen and nectar from a wide variety of plants. Nests are commonly established underground in abandoned rodent burrows or other cavities; however, the species may also use clumps of grass aboveground. RPBB may choose sites in sandy, moss- covered soils on northwest slopes, and may be found in interior forest areas; areas with these characteristics near forested edges and open fields may be especially important. They may also use other areas, such as compost piles or mole hills.[190],[191] Suitable habitat for the RPBB is present within the APR.

The USFWS has identified "high potential zones" around current records (i.e., 2007-present); these areas indicate a high probability of RPBB presence. Within these zones, both suitable and unsuitable habitat may be present.

A portion of the APR between MPs 12.0 to 13.3 and the Kellogg Substation are within a high potential zone for rusty-patched bumble bees. Based on a desktop assessment, the majority of this segment of the APR is currently in agricultural production, which does not provide suitable habitat for the RPBB. However, the DNR MBS site between MPs 12.8 and 12.9 is a non-agricultural area within the high potential zone, which may provide suitable habitat for the RPBB. The remainder of the APR and the RSAs are within a low potential zone. The majority of the RSAs include land in agricultural production, which does not provide suitable habitat for the RPBB. However, the DNR MBS sites within RSA-GAA-1 and RSA-GAA-1 is a non-agricultural area of contiguous native plant communities and may provide suitable habitat for this species.

Higgins Eye Pearlymussel

The Higgins eye Pearlymussel is a freshwater mussel of larger rivers where it is typically found in deep water with moderate currents. The animals bury themselves in sand and gravel river bottoms with just the edge of their partially opened shells exposed; the species feeds by siphoning the water for microorganisms. Since 1980, live Higgins eye Pearlymussels have been found in parts of the upper Mississippi River north of Lock and Dam 19 at Keokuk, Iowa, and in three tributaries of the Mississippi River: the St. Croix River between Minnesota and Wisconsin, the Wisconsin River in Wisconsin, and the lower Rock River between Illinois and Iowa.[192] Suitable habitat for the Higgin's eye Pearlymussel is not present within the assessment area.

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[190] USFWS, Rusty Patch Bumble Bee. November 26, 2024, from https://www.fws.gov/species/rusty-patched-bumble-bee-bombus-affinis.

[191]USFWS. Rusty Patch Bumble Bee Guidance. November 26, 2024, from https://www.fws.gov/sites/default/files/documents/Section%207%20guidance%20for%20rusty%20patched%20bumble% 20bee% 20%28Bombus%20affinis%29.pdf.

[192] USFWS. Higgins Eye. November 26, 2024, from https://www.fws.gov/species/higgins-eye-lampsilis-higginsii.

Sheepnose Mussel

Sheepnose Mussel is a freshwater mussel which reaches 5.5 inches in length. Sheepnose are generally found in medium to large stream systems, typically within shallow shoal habitats with moderate to swift currents over mixtures of coarse sand, gravel, and clay. Individuals may occur in aquatic areas ranging from riffles of a few inches in depth to runs that exceed six meters in larger rivers. Sheepnose Mussel continues to occupy the Upper Mississippi, Ohio, Tennessee, and Lower Mississippi River basins.[193] Suitable habitat for the Sheepnose Mussel is not present within the assessment area.

Tricolored Bat

The Tricolored Bat is one of the smallest bats species native to North America. The species overwinters in caves and mines where available. However, throughout much of its range in the southern United States, roadside culverts, tree cavities, and abandoned water wells may also serve as suitable overwintering habitat.

During the active season (generally, April 1 to October 31), the species may be found roosting among leaf clusters (live and dead) on living or recently dead deciduous hardwood trees. Roost choice may also vary by region and this species has been observed roosting in eastern red cedar trees and pine needles, as well as within manufactured structures such as barns and bridges.[194] Suitable habitat for the Tricolored Bat is present within the vicinity of the APR and all RSAs under analysis for this EA.

Monarch Butterfly

The Monarch Butterfly is a large butterfly with an approximate 3- to 4-inch wingspan and characterized by bright orange coloring on the wings, with distinctive black borders and veining.

The species can be found in a wide variety of habitats including prairies, grasslands, urban gardens, road ditches, and agricultural fields, provided a supply of nectaring plants are available for adult foraging and milkweed plants are present for laying eggs and as a food source for caterpillars.[195] Suitable habitat for the monarch butterfly may be present within vicinity of the APR and all RSAs under analysis for this EA.

On December 17, 2020, the USFWS published the result of its 12-month review of the Monarch Butterfly and determined that listing the species under the ESA was "warranted but precluded," meaning the species meets the criteria for listing as an endangered or threatened species, but the USFWS cannot currently implement the listing because there are other listing actions with a higher priority. The species is now a candidate for listing; however, candidate species are not protected under the ESA.[196] The USFWS has added the Monarch Butterfly to the updated

[193] USFWS. Sheepnose Mussel. November 26, 2024, from https://www.fws.gov/species/sheepnose-plethobasus-cyphyus.

[194] USFWS. Tricolored Bat. November 26, 2024, from https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus.

[195] USFWS. Monarch Butterfly. November 26, 2024, from https://www.fws.gov/species/monarch-butterfly-danaus-plexippus.

[196] USFWS. Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly. 85 Federal Register 81813 (December 17, 2020).

national listing workplan and based on its listing priorities and workload, intends to propose listing the Monarch Butterfly in Fiscal Year 2025, if listing is still warranted at that time, with a possible effective date within 12 months of the proposed rule. The USFWS will also conduct an annual status review to determine if changes in prioritization are necessary. Suitable habitat for the Monarch Butterfly may be present within all analyzed alternatives and segments.

Potential Impacts

ROI: ROW

Duration: Construction (Short term), Operation (Long term), and Decommissioning (Long term)

Size: Varies by species. See previous discussion

Uniqueness: See previous discussion.

Location: Varies by species and communities. See previous discussion

Context: Varies by species and communities. See previous discussion.

Ecological Significant Areas could be affected by clearing, grubbing, grading, excavation, and other earth-moving activities that could result in fragmentation and disruption of community functioning, including changes to surface water flow and groundwater hydrology.

The Project has the potential to impact state-protected turtle species through direct fatalities and habitat disturbance and destruction due to excavation, fill, and other associated construction activities.

Timber Rattlesnake mortality is most commonly caused by poaching, vehicle encounters, and habitat destruction and disturbance.

Seaside Three-awn, Clasping Milkweed, and Beach Heather could be impacted during clearing, excavation, and other construction-related activities.

Based on the USFWS Determination Key (DKey) for the NLEB, the Project "may affect, but is not likely to adversely affect" the species. As the Applicant has committed to the minimization and BMPs, no impacts are anticipated.

Potential impacts to individual tricolored bats may occur if clearing or construction takes place when the species is roosting in its summer habitat, in trees outside of hibernacula. Bats may be injured or killed if occupied trees are cleared during this active window. Tree clearing activities conducted when the species is in hibernation and not present on the landscape will not result in direct impacts to individual bats but could result in indirect impacts due to removal of suitable roosting habitat.

Suitable habitat for Monarch Butterfly and RPBB may be present within the Project area. If the USFWS determines the species should be listed and protections for the species coincide with Project planning, permitting, and/or construction. The Applicant will review Project activities for potential impacts to the species and develop appropriate avoidance and mitigation measures.

Bald eagles can experience loss of habitat and potentially nesting disturbance during construction and maintenance activities, during the operational life of the transmission line there

is also the potential for collisions and electrocution. Constructing within and/or adjacent to an existing utility ROW minimizes impacts to habitat in this area.

The installation of the Xcel and Peoples distribution line could indirectly affect rare and unique natural resources, as the line could be installed within the existing public ROW through portions of McCarthy Lake wetland complex.

Significance: Varies by species and communities. See previous discussion. Impacts are anticipated to negligible to moderate for most species and resources with the implementation of mitigation measures and BMPs detailed below.

Mitigation

The Applicant will continue to coordinate with the DNR and USFWS to avoid and minimize Project impacts on sensitive species by implementing the following general measures during and after the completion of the proposed transmission line:

- BMPs will be used to prevent erosion of the soil in the areas of impact.
- Sound water and soil conservation practices will be implemented during construction and operation of the Project to protect topsoil and adjacent water resources and minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, and stabilizing restored soil.
- Disturbed areas will be re-vegetated with native species and wildlife conservation species, where applicable if the landowner agrees.
- Raptor protection measures will be implemented, including following APLIC Avian Safe Design recommendations and placement of bird flight diverters on the line after consultation with the DNR and/or USFWS.

The following specific measures should be used to help avoid or minimize impacts to rare and unique natural resources during and after the completion of the proposed transmission line:

- BMPs will be used to prevent erosion of the soils in the areas of impact.
- Sound water and soil conservation practices will be implemented during construction and operation of the Project to protect topsoil and adjacent water resources and minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, and stabilizing restored soil.
- Disturbed areas will be re-vegetated with native species and wildlife conservation species, where applicable if the landowner agrees.

Ecologically Significant Areas

DNR staff recommended that the Project be designed to avoid impacts to the native plant communities by confining construction activities to the opposite site of the road. They recommend the following actions to minimize disturbance:

- To the extent practicable, operate within previously disturbed areas.
- Retain a buffer between the proposed activities and both MBS sites.
- Confine construction activities to the opposite side of the road for MBS Sites and rare community. If not feasible, confine construction activities to existing road rights-of-way.
- Minimize vehicular disturbance in these areas by allowing only vehicles necessary for the proposed work.
- Do not stage or store vehicles, equipment, or material (including fill material) in these areas.
- If possible, conduct work in these area when the ground is frozen.
- Inspect and clean equipment prior to operation to avoid spread of invasive species.
- Use effective erosion prevention and sediment control measures.
- Revegetate disturbed soil with a suitable native seed mix as soon as construction as possible.[197]
- Use only weed-free mulches, topsoil, and seed mixes. Mixes with birdsfoot trefoil (*Lotus corniculatus*) and Crown vetch (*Coronilla varia*) are prohibited.

State-protected Species

Suitable habitat for the following state-listed threatened and endangered species is not present within the APR or all other RSAs so impacts are not anticipated. Consequently, no mitigation measures are proposed:

- Butterfly Mussel
- Crystal Darter
- Ebonyshell Mussel
- Fawnsfoot Mussel
- Monkeyface Mussel
- Mucket Mussel
- Pallid Shiner
- Pistolgrip Mussel
- Spike Mussel

[197] Minnesota Board of Water and Soil Resources. Native Plant ID and Information. Retrieved November 30, 2024, from https://bwsr.state.mn.us/native-plant-id-and-information. https://bwsr.state.mn.us/native-plant-id-and-information

Suitable habitat for the following state-listed threatened and endangered species is present within the Proposed Route and Alternative G:

- Blanding's Turtle
- Clasping Milkweed
- Davis' Sedge
- Seaside Three-awn
- Timber Rattlesnake; and
- Wood turtle

DNR staff requested that – if feasible – initial disturbance to grasslands and tree and shrub removal be from May 15 through August 15 to avoid disturbing nests for the following species of special concern:

- Bell's Vireo
- Lark Sparrow

DNR staff recommended surveying for the following species of special concern prior to construction, so that they could be avoided:

- Kentucky Coffeetree

Specific required mitigation measures for State-protected species found in the vicinity of the Project are listed below:

Blanding's Turtle and Wood Turtle

Specific mitigation measures and best management practices for the Blandings Turtle include the following:

- Avoid wetland and aquatic impacts during hibernation season between September 15th and April 15th, if the area is suitable for hibernation.
- Erosion and sediment control should be limited to wildlife friendly erosion control to avoid the inadvertent take of Blandings' turtles.
- Hydro-mulch products should not contain any materials with synthetic (plastic) fiber additives, as the fibers can re-suspend and flow into waterbodies.
- Construction areas (especially aquatic or wetland areas) should be thoroughly checked for turtles before the use of heavy equipment or any ground disturbance on a daily basis.
- Check any holes that have been left unattended for prolonged periods for turtles before being filled.

- The Blanding's Turtle flyer must be given to all contractors working in the area. Illegal collection is a concern with wood turtles so do not post any signs that would bring attention to the presence of wood turtles.[198]
- Monitor for turtles during construction. Report any sightings to Reports.NHIS@state.mn.us with date, observer, location, and a photograph of the turtle.
- If turtles are in imminent danger, they must be moved by hand out of harm's way. Otherwise, they are to be left undisturbed. Helping Turtles Across the Road should be consulted for guidelines on how to move turtles safely out of danger.[199]
- Contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

Timber Rattlesnake

Specific mitigation measures and best management practices for the Timber Rattlesnake include the following:

- Crews working in the area must be advised that if they encounter any snakes, they should not disturb the snakes.
- Erosion and sediment control must be limited to wildlife life friendly erosion control to avoid the inadvertent take of timber rattlesnakes.[200]
- Wear appropriate personal protection equipment, such as thick pants, boots, and leather gloves.
- Care should be taken around stock-piled materials, as snakes use these materials as shelter.
- Report any sightings to Reports.NHIS@state.mn.us with the date, observer, location, and photograph of the timber rattlesnake.
- Contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

Seaside Three-awn, Clasping Milkweed, and Beach Heather

Seaside Three-awn, Clasping Milkweed, and Beach Heather have been documented in the assessment area in savanna and upland prairie communities. All potential habitats for these species must be avoided. If avoidance is not possible, the Applicant will use a qualified surveyor to conduct a survey for potentially endangered and threatened species in the area.

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[198] MDNR. Blanding Turtle Flyer. November 22, 2024, from https://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/flyer.pdf.

[199] MDNR. Helping Turtles. November 22, 2024, from https://www.dnr.state.mn.us/reptiles_amphibians/helping-turtles-roads.html.

[200] MDNR. Erosion Control. November 24, 2024, from https://files.dnr.state.mn.us/eco/nongame/wildlife-friendly-erosion-control.pdf.

Once a final route has been selected, the Applicant will work with DNR staff to implement avoidance and conservation measures necessary to minimize impacts to these species.

Federally Protected Species

Suitable habitat for the following federally listed, candidate, and species proposed for listing is present within the vicinity of all proposed alternatives routes under analysis for this EA.

Northern Long-eared Bat

Based on the USFWS Determination Key (DKey) for the NLEB, in areas with a federal nexus, the Project "may affect, but is not likely to adversely affect" the species. With that determination of effect, a "Consistency Letter" was generated for the RPA process. For areas that do not have a federal nexus, the Project is unlikely to result in "unauthorized take" of NLEB. The Applicant will commit to the minimization and avoidance measures outlined in the DKey. Consequently, no impacts are anticipated. To avoid possible impacts, tree removal will be avoided from June 1 to August 15.

Rusty Patched Bumble Bee

A portion of the APR between MPs 12.0 and 13.3 and the Kellogg Substation are within a high potential zone for the RPBB. Based on a desktop assessment, the majority of the APR within this segment is in agricultural production, which does not provide suitable habitat for the RPBB. The APR does cross a non-agricultural area within the high potential zone between MPs 12.8 and 12.9. This area corresponds with the McCarthy Lake MBS site. Similar to the avoidance measures outlined for that MBS site and wetland, the Applicant will avoid placing structures in the high potential zone location by spanning this area. However; the forested components within the ROW will be permanently converted to herbaceous vegetation, and temporary impacts will occur during construction including clearing activities, installation of construction mats, and equipment travel down the ROW. The Applicant has committed to a number of BMPs outlined in **Section 4.9.1.9**. Therefore, impacts to the rusty patched bumble bee are not anticipated.

Tricolored Bat

Potential impacts to individual Tricolored bats may occur if clearing or construction takes place when the species is roosting in its summer habitat, in trees outside of hibernacula. Bats may be injured or killed if occupied trees are cleared during this active window. Tree clearing activities conducted when the species is in hibernation and not present on the landscape will not result in direct impacts to individual bats but could result in indirect impacts due to removal of suitable roosting habitat.[201]

[201] USFWS. Species Status Assessment Report for the Tricolored Bat (*Perimyotis subflavus*) (2021). November 28, 2024, from https://ecos.fws.gov/ServCat/DownloadFile/221212.

Monarch Butterfly

If the USFWS determines the Monarch Butterfly should be listed and protections for the species coincide with planning, permitting, and/or construction, the Applicant will review project activities for potential impacts to the species and develop appropriate avoidance and mitigation measures. Constructing within and/or adjacent to an existing utility ROW minimizes impacts to suitable habitat for the Monarch Butterfly.

Bald Eagle

If Bald Eagle nests are identified within 660 feet of construction activities during the eagle's active season, the Applicant will coordinate with the USFWS and DNR regarding potential impacts and to obtain the necessary permits. The Applicant will adhere to guidance provided.

4.9.1.12. Cumulative Impacts

In addition to analyzing the direct and indirect impacts of the proposed Project, Minnesota's environmental review rules require the evaluation of "cumulative potential effects" which is defined as "the effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects" (Minn. R. 4410.0200, subp. 11). Consideration of cumulative potential effects is intended to aid decisionmakers so that they do not make decisions about a specific project in a vacuum. Effects that may be minimal in the context of a single project may accumulate and become significant when all projects are considered.

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.[202] 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.

A review of foreseeable projects (federal, state, or local unit of governments) in the Project area and along the proposed route that may affect or be affected by the Project; entities contacted and databases consulted included were MnDOT, DOC, MPCA, City of Wabasha, and Wabasha County.

Recently constructed projects include: Hampton-to-Rochester-to-La Crosse 345-kilovolt (kV) Transmission Project (Hampton–Rochester–La Crosse 345 kV Project) the Peppin Solar Garden north of Kellogg in 2021, the Kellogg Solar Garden in 2017, and the cell tower along State Highway 42 2.5 miles west of Kellogg.

[202] Minn. R. 4410.0200, subp. 11a

Northern States Power Company constructed the Minnesota portion of the **Hampton–Rochester–La Crosse 345 kV Project** in partnership with Dairyland, Rochester Public Utilities, Southern Minnesota Municipal Power Agency, and WPPI Energy in the mid-2010s. The Hampton–Rochester– La Crosse 345 kV Project consisted of a 345 kV transmission line between the Hampton Substation near Hampton, Minnesota (southeast of the Twin Cities) and a substation near La Crosse, Wisconsin. The 345 kV transmission line was constructed in two distinct geographic sections in Minnesota:

- A section between the Hampton Substation and a new North Rochester Substation located between Pine Island and Zumbrota, Minnesota.
- A section between the proposed North Rochester Substation and the proposed Mississippi River crossing near Alma, Wisconsin; referred to as the North Rochester-Mississippi River 345 kV Section.

The **Hampton–Rochester– La Crosse 345 kV Project** also included a 161 kV transmission line between the proposed North Rochester Substation and the existing Northern Hills Substation northwest of Rochester, Minnesota.

RSA-A ties into the Hampton–Rochester– La Crosse 345 kV line approximately 500 feet north of County Road 27, and the APR ties into the line approximately 0.9 miles north of County Road 27. The Wabasha 161 kV Transmission Line Relocation would be north of and largely parallel the Hampton–Rochester– La Crosse 345 kV line up to 2.1 miles where both lines cross U.S. Highway 61. The eastern-most 0.5 miles of the APR into the Kellogg Substation is adjacent to and parallels the Hampton–Rochester– La Crosse 345 kV Project along County Road 84.

Peppin Community Solar Garden is an approximately 7.2-acre facility located north of 645th Street north of the Zumbro River, Kellogg, and the Project. It was constructed in 2021.

The **Kellogg Community Solar Garden** is an approximately 12.8-acre facility located between U.S. Highway 61 to the west and 161st Avenue to the east and north of 630th Street. It is south of Kellogg in a residential and light-industrial area. The Project is immediately north of the facility.

An estimated **200-foot tall cell tower** located south of State Highway 42 was constructed in 2020. The Project is located immediately north of the tower.

Current and reasonably foreseeable future projects within the Project area include the Zumbro River Trail, Rolling Hills Beneficial Use Area, County Road 84 modernization, Mankato – Mississippi 345 kV Transmission Line Project, and the relocation of the local distribution line associated with this Project.[203]

The **Zumbro River Trail** is an approximately 1.1-mile long recreational trail over the Zumbro River on the northern edge of Kellogg and approximately 1.0 miles north of the Project. Construction is planned for 2025.

The Wabasha Secondary Road Department plans on upgrade and modernize all or portions of **County Road 84** within the next 10 years, depending on funding and other administrative

[203] The distribution line project was also assessed for indirect effects and impacts as part of this analysis.

concerns. The Project runs along and parallel to Wabasha County Road 84 for approximately 1.7 miles before entering the Kellogg Substation. At this time, there are no detailed alignment or proposed road geometry details available; although the alignment will likely be on or near the same as existing roadway, with the exception of areas of horizontal curves.

The **Rolling Prairie Beneficial Use Area** is a 100-year plan designed to manage Inland waterway dredged sediments from dredged navigation channels west of the Project along the Mississippi River.[204] The USACE, St. Paul District, has developed a regional sediment management plan that will result in beneficial uses of anticipated dredged material. The Rolling Prairie Beneficial Use Area is a 950-acre placement site consisting of several land parcels available from willing sellers that will accommodate a 100-year plan for dredged material management. THE USACE developed and is implementing the multiple-use site plan, which creates sand prairie and wetland habitat, provides public access to sand stockpiles, and implements agriculture studies with the University of Minnesota to evaluate the benefits of dredged material (sand) amendments in alluvial cropland soils (which has not been widely investigated). The Rolling Prairie Beneficial Use Area is immediately north of the Project along County Road 84.

Xcel Energy is proposing the **Mankato – Mississippi 345 kV Transmission Line Project** in Blue Earth, Le Sueur, Waseca, Rice, Dodge, Olmstead, Goodhue, Winona, and Wabasha counties in Minnesota.[205] On April 2, 2024, the applicant submitted a joint application for a certificate of need and route permit1 to the Minnesota Public Utilities Commission (Commission) for construction of the project.[206] Based on the location of the Project and the differences in routing opportunities in different geographic locations, the Project is divided into four segments: Segments 1, 2 and 3 making up the 345 kV portion and Segment 4 the 161 kV portion. Segment 3 (North Rochester to Mississippi River) is the closest segment to the Wabasha 161 kV Relocation Project. Segment 3 will consist of a new 345 kV transmission line between the existing North Rochester Substation and the Mississippi River. This segment involves converting an existing 161/345 kV transmission line to 345/345 kV operation or installing a new 345 kV circuit on existing double-circuit structures. Segment 3 is located approximately 2 to 5 miles south of the Wabasha 161 kV Relocation Line. The line is scheduled to be in service by 2030.

Xcel and Peoples Electrical Cooperative will need to abandon and relocate portions of its distribution line along State Highway 42 in response to the Wabasha 161 kV Transmission Line Relocation Project. The timing of this effort is not known.

Cumulative impacts analysis must be conducted within the context of the resources evaluated in this EA. The magnitude and context of the effect on a resource depends on whether the cumulative effects exceed the capacity of a resource to sustain itself and remain productive. If

[204] Rolling Prairie, Minnesota, Beneficial Use Area: A 100-Year Plan for Multiuse Land Management and Restoration Using Dredged Sediment by Chuck Theiling, Eric Hanson, Dan Adams, and Burton Suedel.
[205] MDOC. Project Filing. November 26, 2024, from https://apps.commerce.state.mn.us/web/project-file/12847
[206] This segment was previously permitted by the Commission as part of the CapX2020 Hampton – Rochester – La Crosse 345 kV Transmission Project (Hampton – La Crosse Project) in 2012.

cumulative impacts are expected to exceed these thresholds, they would be considered significant.

The current and reasonably foreseeable projects occurring within or near the Project area are primarily maintenance of existing infrastructure, Xcel and Peoples burial of existing distribution line, and County Road 84 modernization projects. Given the relatively small size of the proposed project, its anticipated minimal human and/or environmental impact, and the anticipated impacts of reasonably foreseeable projects, cumulative impacts are anticipated to be minimal.

Human Settlement

This section describes cumulative potential effects to the human settlement resources discussed in **Section 4.4**.

Cumulative potential effects on human settlements are anticipated to be minimal to moderate. Some projects would have positive effects on human settlements by improving transportation (county road project) and recreational opportunities (trail and open space efforts). Past and future projects have had or will result in aesthetic impacts, especially the Hampton–Rochester–La Crosse 345 kV Project, the two solar gardens outside of Kellogg and the Mankato – Mississippi 345 kV Transmission Line Project. As the anticipated transportation project provides improvements in existing roadways, aesthetic impacts are anticipated to be minimal. Construction of the Hampton–Rochester–La Crosse 345 kV Project, two community solar gardens, the planned Mankato – Mississippi 345 kV Transmission Line Project will also result in aesthetic impacts (**Section 4.4.1**). Solar facilities, the cell tower, and transmission lines introduce new visual elements into the landscape, so project area aesthetic impacts will increase as a result of past and foreseeable projects.

Construction identified projects will generate construction related jobs and material sales and provide additional recreational and tourism opportunities. These jobs and materials may or may not be sourced locally. Impacts are anticipated to be positive but negligible (Perhaps some examples here). The increase in energy projects in the area may increase tension in the project area between energy transmission and rural character.

None of the past or anticipated projects would cause displacement, given the rural character of the area and the fact homes and businesses would be avoided.

The projects have and will convert agricultural land to other uses, though impacts associated with the Rolling Prairie Beneficial Use Area and Zumbro River Trail will be largely positive, as it will increase flood protection, create wetland and prairie restorations, and provide new recreational opportunities (Add some examples here). It is anticipated that these projects will be consistent with local zoning and land use rules. Cumulative potential effects are anticipated to be minimal.

The past and anticipated future projects may result in long-term, negative impacts to future land use, though cumulative potential effects are anticipated to be minimal given the size and scope of these projects.

Past and anticipated projects are not expected to impact existing rights-of-way, as projects have been or will be placed outside – and parallel to – or span existing rights-of-way. Cumulative potential effects as a result of past and anticipated projects are expected to be minimal.

Additionally, past and anticipated projects, along with this project, will not impact the cultural values of Wabasha County. Cumulative potential effects to culturally relevant resources are not anticipated.

Together, the projects will cause short-term noise impacts. These impacts may or may not exceed state noise standards. Cumulative potential effects from noise sources are anticipated to be both short-term and minimal.

The previous projects have and will change the visual landscape, with the introduction of solar-generating facilities north and south of Kellogg, high-voltage transmission lines, and a cell tower – all of which have or will introduce an industrial viewpoint on the landscape. Additional transmission lines will further transform the landscape. The development of the Rolling Prairie Beneficial Use Area will positively affect the landscape by restoring native plant communities and wetlands on the landscape. Cumulative potential effects are anticipated to be long-term and moderate in high visibility areas.

Properties values would not be affected by past or anticipated projects.[207] The cumulative potential effects of past and anticipated projects on property values are unknown at this time.

Health and Safety

This section describes cumulative potential effects to human health and safety as discussed in **Section 4.5**.

Cumulative potential effects on public health and safety are anticipated to be minimal to slightly positive. Impacts on public health and safety as a result of the Hampton–Rochester–La Crosse 345 kV Project and Mankato – Mississippi 345 kV Transmission Line projects are anticipated to be minimal. Most of the projects foreseen in the project area are road and highway related. Installation of the buried Xcel and Peoples distribution line will be minimal and reflect the need to maintain and improve local roads to ensure their safe operation and the public's health and safety.

Based on past studies and existing transmission infrastructure in the area, little to no effects have been found from EMF and stray voltage to humans and livestock. Although the increase of other transmission and distribution lines in the area may raise further concerns by residents on exposure to these, the Applicant and others proposing/constructing this infrastructure will still be required to meet the standards as established by the Commission as well as those set by NESC.

The projects will cause temporary increases in exhaust and fugitive dust emissions during construction. The Mankato-Mississippi 345 kV Transmission Line and other proposed project will

[207] Past actions are already embedded in existing values, in some respect. Anticipated projects seem to be the factor that cannot be fully estimated at this time.

cause temporary increases in exhaust and fugitive dust emissions during construction. Cumulative potential effects to air quality resources are anticipated to be short- and long-term, and minimal.

The potential projects will increase risks to workers during the Project construction. Impacts related to the normal operation of the proposed transmission line projects and the solar-generating generating facilities are anticipated to be minimal. Cumulative potential effects are anticipated to be minimal.

Public Services and Infrastructure

This section describes cumulative potential effects to public service and infrastructure as discussed in **Section 4.6**.

The proposed Mankato-Mississippi 345 kV Transmission Line, trail construction, road modernization, and this proposed project will cause a temporary increase for the need for lodging and other services and accommodations for construction worked relocating to the area during construction.

Collectively, projects may cause temporary delays to emergency vehicles and public transportation during project construction; however, the cumulative potential effects of these activities are anticipated to be short-term and minimal.

Additionally, the projects will increase traffic over the short-term (project construction). Cumulative potential effects to transportation from project construction activities are anticipated to be long-term and minimal.

Operations of airports will not be affected by these projects, so impacts would be minimal.

Utilities and Existing Infrastructure

Cumulative potential effects on utilities and infrastructure are anticipated to be minimal to negligible. As noted above there are two recently completed transmission projects, two solar gardens and one cell tower. These utilities will be avoided, and no impact is expected from the Project. A Gopher One utility locate request will be conducted during the design phase to locate all buried utilities. Identified utility conflicts will be avoided and/or coordinated with utility companies.

Land-based Economies

This section describes cumulative potential effects to the land-based economies discussed in **Section 4.7**.

Cumulative potential effects on land-based economies are anticipated to be minimal. Most of the projects in the past and foreseeable future are improvements to existing roadways. The impact to current land use is expected to be negligible. Additional energy infrastructure will likely result in some removal of agricultural land from production, but overall impacts to agricultural land in the Project area will be minimal. The Zumbro River Trail and Rolling Prairie Beneficial Use Area will increase recreational and tourism to the area and will largely be positive benefits for the local area.

Cumulative impacts to utilities and other infrastructure is not anticipated or would be minimal. The Applicant will coordinate with any potentially impacted utility company including the Canadian Pacific Railroad. In addition, the Project will design accordingly to minimize impacts to existing utilities and infrastructure.

Archaeological and Historical Resources

This section describes cumulative potential effects to the archaeological, cultural, and historic resources discussed in **Section 4.8**.

Because archaeological resources are unidentified, these projects have the potential to disturb previously undocumented archaeological resources, making evaluation of cumulative potential effects uncertain. The overall impact intensity level is expected to remain negligible, with further mitigation presented through the Unanticipated Discovery Plan which is an enforceable provision of the final route permit.

Natural Resources

This section describes cumulative potential effects to the natural resources discussed in **Section 4.9**.

Long-term impacts may occur if excavation during construction uncovers or exacerbates karst features, such as unmapped sinkholes, and/or underground cavities. The final route permit will contain a Karst Survey and Karst Contingency plans, to address karst-related construction issues. This plan is an enforceable provision of the final route permit. As a result, cumulative potential effects related to karst features are anticipated to be minimal.

The projects may result in short-term impacts to soils during project construction due to increased potential for erosion, mixing of topsoil and subsoil, compaction, or introduction of rock. Long-term impacts to soils are not anticipated, considering the proposed projects will require topsoil for remediation activities. Long-term impacts may occur if revegetation is ineffective The route will be regularly maintained through pruning and mowing to ensure compliance with state and federal requirements regarding vegetation management, which are detailed in the VMP.[208] The Applicant will be required to develop an Invasive Species Prevention Plan and file it with the Commission at least 14 days prior to the pre-construction meeting. The VMP and Invasive Species Prevention Plan are enforceable provisions of the permit. Cumulative potential effects are anticipated to be short-term and be minimal with use of recognized and accepted BMPS.

Collectively, past and anticipated projects, in combination with this Project, are not likely to increase the potential for altered groundwater flow if excavation occurs in areas of shallow bedrock or areas of high geologic sensitivity during project construction. Cumulative potential effects to groundwater resources are anticipated to be minimal.

[208]Dairyland's RPA. Appendix I, Vegetation Management Plan, Retrieved January 29, 2025, from https://apps.commerce.state.mn.us/web/project-file/12760.

The transmission line project and Zumbro River Trail will span some surface waters, but these resources would not likely be directly impacted, as BMPs and avoidance measures would be used. Cumulative potential effects to surface water resources are anticipated to be short term and minimal.

Wetland resources may experience long-term impacts from type conversion and increased sedimentation, resulting in higher levels of turbidity and possible wetland loss, though this would be minimized through implementation of BMPs, avoidance, and other measures. Development of the Rolling Prairie Beneficial Use Area would have a beneficial effect to area wetlands through restoration. Cumulative potential effects to wetland resources are anticipated to be minimal.

All projects have or would employ revegetation and BMPs before, during, and after construction, consistent with the VMP, so impacts to vegetation would be minimal.

The projects will displace wildlife during construction, with a likelihood of some inadvertent mortalities. Long-term impacts include habitat type change through potential increased fragmentation and edge effects. Because of the largely open, agricultural landscape in the area, these impacts are anticipated to be minimal. Long term and permanent impacts include a greater risk of bird electrocution or collision and bat fatalities due to increased wind turbines and transmission lines on the landscape. Potential impacts can be mitigated. The overall impact intensity level is expected to remain minimal.

Rare and Unique Resources

This section describes cumulative potential effects to the rare and unique natural resources discussed in **Section 4.9.1.11**

Cumulative potential effects on rare and unique natural resources and protected species is uncertain. Rare and unique species are documented and managed within the area. Creation of the Rolling Prairie Multiple Use area would positively affect these types of resources through restoration and open-space protection.

5. UNAVOIDABLE AND IRREVERSIBLE 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 and implementation of BMPs, certain impacts cannot be avoided.

5.1. Unavoidable Impacts

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

- Possible traffic delays and fugitive dust on roadways.
- Visual and noise disturbances.
- Soil compaction and erosion.
- Vegetative clearing; removal or changes to wetland type and function to be confirmed after delineation is completed.
- Disturbance and temporary displacement of wildlife, as well as direct impacts to wildlife due to inadvertent injury during structure placement or other construction activities.
- Minor amounts of habitat loss or fragmentation.
- Converting the underlying land use to an industrial use.
- Criteria pollutant and GHG emissions.

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

- Visual impact of structures, conductors, and the new Kellogg Substation.
- Change in landscape character and any subsequent impact to cultural values.
- Loss of land use for other purposes where structures are placed.
- Injury or death of avian species that collide with, or are electrocuted by, new transmission lines or conductors.
- Interference with AM radio signals.
- Continued maintenance of tall-growing vegetation.
- Criteria pollutant and GHG emissions.
- Increased EMF on the landscape (potential impacts from EMF are minimal and are not expected to impact human health).

5.2. Irretrievable or Irreversible Impacts

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 to construct the transmission line. While it is possible that the structures, conductors, and buildings could be removed and the right-of-way restored to previous conditions, this is unlikely to happen in the reasonably foreseeable future (approximately 50 years). The loss of wetlands would be considered irreversible, because replacing these wetlands could take a significant amount of time. Certain land uses within the right-of-way will no longer be able to occur, especially at the Kellogg Substation.

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, hydrocarbon fuel, steel, concrete, wood, and other consumable resources. The commitment of labor and fiscal resources is also considered irretrievable.

6. APPLICATION OF ROUTING FACTORS

The Commission must consider 12 factors when designating a route for a HVTL.[209] 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. These factors include:

A. Effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services.

B. Effects on public health and safety.

C. Effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining.

D. Effects on archaeological and historic resources.

E. Effects on the natural environment, including effects on air and water quality resources and flora and fauna.

F. Effects on rare and unique natural resources.

G. Application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.

H. Use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.

I. Use of existing large electric power generating plant sites.

J. Use of existing transportation, pipeline, and electrical transmission systems or rights-of-way.

K. Electrical system reliability.

L. Costs of constructing, operating, and maintaining the facility which are dependent on design and route.

M. Adverse human and natural environmental effects which cannot be avoided; and

N. Irreversible and irretrievable commitments of resources.

At the time the Commission makes a final route permit decision, it must: 1) determine whether the EA and the record created at the public hearing address the issues identified in the scoping decision; 2) make specific findings which it has considered locating a route for a new HVTL along an existing HVTL route or parallel to existing highway rights-of way; and 3) to the extent these are not used for the route, state the reason why they are not used.

[209] Minn. Stat. § 216E.03, subdivision 7(b)

This analysis will be grouped by comparison areas:

- APR
- RSA-A
- RSA-B through RSA-F, and
- RSA-G

The analysis applies the routing criteria to the segment alternatives and discusses the relative merits of each alternative. **Table 26** will be used to illustrate the various impacts across comparison areas where impacts are different.

Table 26. Routing Criteria.

Anticipated Impact or Consistency with Routing Criteria	
Impacts are anticipated to be minimal with the use of BMPs and general route permit conditions or routing option is consistent with routing criteria.	
Impacts are: 1) anticipated to be minimal to moderate with the use of BMPs and general route permit conditions; 2) may require special conditions or selection of a specific routing option to mitigate impacts, or 3) or a routing option might be minimal but the potential for impacts greater than the other options or routing option is consistent with the routing criteria but less so than other options in the area of concern.	
Impacts are: 1) anticipated to be moderate or significant and unable to be mitigated; or 2) routing option is not consistent with routing criteria or consistent only in part.	

A Draft Route Permit with permit conditions stemming from this assessment is included as **Appendix F**.

6.1. Relative Merits

This EA reviews the proposed Project relative to the routing factors in Minn. R. 7850.4100. This review looks not only at the Factors, but also the Elements that make up those Factors (Factor: human settlement; Elements: displacement, noise, aesthetics, cultural values, recreation, and public services). With adherence to BMPs during construction and operation, and to the general permit conditions found in the Draft Route Permit (**Appendix F**), it is anticipated that minimal negative impacts would result from the development of the proposed Project.

Graphics (described above) are used to illustrate the application of the routing factors outlined in Minn. R. 7850.4100 to the proposed Project (**Table 28**). A discussion highlighting differences follows.

The routing factors are used to assess and compare the proposed route with alternative route segments. This analysis involves the application of the routing factors to evaluate the applicant's

proposed route alongside the alternative segments. This approach is designed to better understand the potential impacts and benefits of each option, which provides valuable information to the public, as well as the PUC as they consider a final route for the Project.

For the purpose of this analysis, the Applicant's Proposed Route (APR) is evaluated in its entirety, spanning approximately 13.3 miles. The route segment alternatives are also assessed in their respective full lengths as proposed, but spatially, they are intended to replace specific portions of the APR. Since the Route Segment Alternatives (RSAs) are geographically distinct, they are presented through three categories (RSA-A; RSA-B through RSA-F; and RSA-G), as shown in **Table 27**. This approach was adopted to better assess the characteristics of each route segment alternative within their unique spatial context and grouping.

Table 27. Application of Routing Factors/Relative Merits of Routing Options.

Element	Application of Routing Factor			
	APR	RSA-A	RSA-B – RSA-F	RSA-G
Factor A: Human Settlement				
Aesthetics	△	○	○	△
Displacement	○	○	○	○
Cultural	○	○	○	○
Public Services	○	○	○	○
Transportation	○	○	○	○
Recreation	○	○	○	○
Property Values	○	○	○	○
Electrical Interference	○	○	○	○
Emergency Services	○	○	○	○
Zoning/Land Use	△	○	○	△
Factor B: Public Health and Safety				
Electrical and Magnetic Fields	○	○	○	○
Stray Voltage	○	○	○	○

Element	Application of Routing Factor			
	APR	RSA-A	RSA-B – RSA-F	RSA-G
Air Quality	●	●	●	●
Safety	●	●	●	●
Factor C: Land-Based Economics				
Forestry	●	●	●	▲
Agriculture	●	●	●	●
Tourism	●	●	●	●
Mining	●	●	●	●
Factor D: Archaeological and Historical Resources				
	●	●	●	●
Factor E: Natural Environment				
Air	●	●	●	●
Surface Water	●	●	●	●
Wetlands	●	●	●	●
Floodplain	●	●	●	●
Vegetation	●	●	●	●
Wildlife	●	●	●	●
Factor F: Rare and Unique Natural Resources				
	●	●	●	⬟
Factor H: Paralleling Existing ROW, survey lines, natural divisions, and agricultural boundaries				
	●	●	▲	▲
Factor J: Use of Existing Transportation, Pipeline, and Electrical Transmission Systems or ROW				

Element	Application of Routing Factor			
	APR	RSA-A	RSA-B – RSA-F	RSA-G
	●	●	▲	▲
Factor K: Electric System Reliability				
	●	●	●	●
Factor L: Cost	APR – $32.4 million RSAs – $1.5 million (RSA-GAA) to $3.7 million (RSA-F)s			
Factor M: Unavoidable Impacts				
	●	●	●	●
Factor N: Irreversible and Irretrievable Commitments of Resources				
	●	●	●	●

As shown in Figure 1, RSA-A is distinguishable from the grouping of route alternative segments (RSA-B through F) and the isolated segment designated as RSA-G. This grouping helps to better understand the route options and serves as a useful framework for comparing the routes, particularly where alternative segments are in close proximity (e.g., RSA-B through F). Using the route analysis summary in Table 28, the following sections detail and explain the findings for each routing factor and element, comparing both the proposed and alternative routes.

6.1.1.1. Factor: Effects on Human Settlement (A)

Elements: noise, displacement, cultural values, public services, transportation, recreation, property values, electronic interference, emergency services, zoning/land use

Impacts related to noise, cultural values, public services, transportation, recreation, electronic interference, emergency services, and property values are anticipated to be minimal across all routing alternatives with the use of standard construction techniques and the general conditions in the Draft Route Permit (see **Appendix F**). Displacement of residences or business properties is not anticipated in any of the comparison areas (APR, RSA-A, RSA-B through RSA-F, and RSA-G) of the Project.

Element: aesthetics

The HVTLs will be collocated for most of the proposed route, adjacent to existing roads, railroad or utility ROWs for 9.5 miles that has existing utilities with similar infrastructure influencing the aesthetic appearance of the landscape. However, while some routes are located parallel to roadways with similar infrastructure, some routes are located where the poles or lines would

stand out and potentially be a negative aesthetic element. The following is a comparison of routes:

- RSA-A1 and A2: Similar to the first mile of the APR these routes are located adjacent to or through open fields and would be easily visible; This route is located further from three existing homesteads and may be less visible from these farms. The length of the routes are longer than the APR from the start and to where the routes connect to State Highway 42 and do not parallel 215th Street for the half mile to connect to State Highway 42, which has residences along it, which the APR does.
- RSA-B through RSA-F: These routes avoid close proximity to one large farmstead that is located adjacent to State Highway 42. These routes have some portion of the route travel through open fields and are located along a smaller county roadway which tend to have less utility infrastructure which may have a more visual presence than the state highway.
- RSA-GAA-1 and RSA-GAA-2: These routes travel through a Red Oak – White Oak Forest within the Snake Creek Bluffs South MBS site however the only views to this forest would be from traveling along 608th Street. The APR shifts off the State Highway alignment near one farmstead, moving approximately 100-200 feet further east to provide more visual distance from this farm.

In conclusion, routes identified above that span farm fields will be more visually apparent and not blend into the landscape as well as routes following roadway alignments where similar infrastructure exists.

Element: consistency with local land use and planning

The route factor consistency with local land use plans does not have any differences between routes except for RSA-G. RSA-G routes will be near areas of bluff lands which will require a 30-foot structure setback requirement from either the toe or top of a bluff.210 This will need to be assessed when engineering the Project confirm this can be compiled with, especially for RSA GAA-2.

APR and RSAs are within the vicinity of the residential and other structures, but APR would cross the Cowpokes Western Shop. The APR alignment would need to be engineered to avoid placing structures that would interfere with this business.

6.1.1.2. Factor: Effects on Public Health and Safety (B)

Elements: EMF/electric fields, stray voltage, air quality, and safety

Impacts on public health and safety are anticipated to be minimal across all routing alternatives with the use of standard construction techniques and the general conditions in the Draft Route Permit (see **Appendix F**).

[210] Wabasha County Planning and Zoning. Land Use Permit Checklist. Retrieved January 12, 2025, from https://cms9files1.revize.com/wabasha/planning%20and%20zoning/Checklists/LUP_Checklist.pdf

In comparison of the area of RSA-G, GAA-1 and GAA-2 place the Project at a greater distance from an operating dairy then the APR. This distance may mitigate potential stray voltage impacts at the dairy. However, as discussed in **Section 4.5.1.3**, stray voltage is typically not a phenomenon associated with transmission lines, but rather with the distribution of electricity to end users.

6.1.1.3. Factor: Effects on Land-Based Economies (C)

Elements: forestry, agriculture, tourism, and mining

Impacts to forestry, agriculture, tourism, and mining are avoided by the proposed Project through the route selection process. Consequently, potential impacts are anticipated to be minimal across all routing alternatives with the use of standard construction techniques and the general conditions in the Draft Route Permit (see **Appendix F**).

6.1.1.4. Factor: Effects on Archaeological and Historic Resources (D)

No known archaeological or historical sites were identified within the APR, RSA-A, RSA-B through RSA-F, and RSA-G comparison areas. The procedures outlined in the Draft Route Permit (**Appendix D**) provide an outline of the process for resolution should any previously unknown archaeological resource or human remains be identified or encountered. Given the lack of previous survey over much of the ROI, it is recommended that a Phase I archaeological survey of the final route and substation location be conducted.

6.1.1.5. Factor: Effects on Natural Environment (E)

Impacts on the natural environment are anticipated to be minimal across all routing alternatives with the use of standard construction techniques and the general conditions in the Draft Route Permit (see **Appendix F**).

6.1.1.6. Factor: Effects on Rare and Unique Natural Resources (F)

In general, direct impacts to any rare and unique natural resources are not anticipated for much of the APR and RSA-A through RSA-F, and any indirect impacts should be minimal with the use of design (spanning sensitive resources, co-locating the ROW) and construction techniques (BMPs associated with the DNR License to Cross) and the general conditions in the Draft Route Permit (see **Appendix F**). The McCarthy Lake MBS along the APR will be spanned and avoided by construction. In the RSA-G comparison area, if GAA-2 were utilized for the Project, the transmission would impact the White Oak-Red Oak Forest in this area. These impacts could be avoided by using the APR or GAA-1.

6.1.1.7. Factor: Use or paralleling of existing linear features and boundaries (H)

The APR has been developed to parallel adjacent to State Highway 42, section lines or property boundaries wherever possible. Because this is a complete route segment, the following summarizes the differences between the APR and the RSAs in the same location.

- RSA-AA-1 and AA-2: In comparison to the APR, there is little difference between the amount of parallel vs not parallel.

- RSA-B through RSA-F: In comparison to the APR, which in its entirety for this segment parallels State Highway 42, all RSAs have a portion that do not parallel existing linear features. RSA–F does parallel linear features and boundaries, following N. Wabasha County Road 14 and a section line for the majority of its alignment, the next great distance.
- RSA-GAA-1 and RSA-GAA-2: In comparison to the APR, which in its entirety parallels State Highway 42, RSA-GAA-1 and GAA-2 do not parallel any linear features.

In conclusion, the APR parallels linear features better than RSA-B through RSA-G. RSA-AAA-1 and RSA-AAA-2 do not have distinguishing differences for paralleling linear features.

6.1.1.8. Factor: Use of existing transportation, pipeline, and existing transmission systems or ROW (J)

The APR has been developed to parallel adjacent to State Highway 42 and other utilities wherever possible. As this is a complete route segment, the following summarizes the differences between the APR and the RSAs in the same location.

- APR: In comparison to all other routes, the APR overall does the best at paralleling existing transportation, and transmission system routes.
- RSA-AAA-1 and RSA-AAA-2: In comparison to the APR, which parallels the existing transmission system (also 215th Street) between MP 1.0 and 1.5, this route does not parallel any existing transmission system and has less of the route parallel to an existing roadway.
- RSA-B through RSA-F: In comparison to the APR, which in its entirety for this segment parallels State Highway 42, all these routes have a portion that do not parallel existing transportation or transmission system routes.
- RSA-GAA-1 and RSA-GAA-2: In comparison to the APR, which in its entirety for this segment parallels State Highway 42, RSA-GAA-1 and GAA-2 do not parallel existing transportation or transmission system routes.

In conclusion, the APR parallels existing transportation or transmission system routes better than any other proposed route.

6.1.1.9. Factor: Electrical System Reliability (K)

Impacts on electrical system reliability are anticipated to be minimal across all routing alternatives with the use of standard construction techniques and the general conditions in the Draft Route Permit (see **Appendix F**). The Project is intended to continue and improve electrical service in the area.

APPENDIX A. SCOPING DECISION DOCUMENT

COMMERCE DEPARTMENT

In the Matter of the Route Permit Application of Dairyland Power Cooperative for the Wabasha 161 kV Line Relocation Project in Wabasha County, Minnesota

ENVIRONMENTAL ASSESSMENT SCOPING DECISION

DOCKET NO. ET-3/TL-23-388

The above matter has come before the Commissioner of the Department of Commerce (Department) for a decision on the scope of the environmental assessment (EA) that will be prepared for the Wabasha 161 kV transmission line relocation project, proposed by Dairyland Power Cooperative (Dairyland or applicant) in eastern Minnesota.

Project Description

Dairyland Power Cooperative submitted a joint certificate of need and route permit application to the Commission to relocate approximately 13.3 miles of 161 kV transmission line and construct a new Kellogg substation (See Map 1).

The project involves relocating approximately 10.4 miles of the existing Dairyland LQ34 161 kV transmission line near the town of Plainview, Minnesota. The project will start at Structure X-Q3-75, which will be removed and replaced with a new structure. The new 161 kV line will extend 13.3 miles northeast and east, ending at a new 161/69kV substation within a 10.8 acre site off County Road 84, southeast of Kellogg and west of the Mississippi River (Kellogg substation). The project route passes through Plainview, Highland, Watopa, and Greenfield Townships, concluding east of Kellogg in Wabasha County, Minnesota.

Project Purpose

In July 2022, the Midcontinent Independent System Operator (MISO) approved a long-range transmission plan that included a new Wilmarth-North Rochester-Tremval transmission line. The new 345 kV line, referred to as the Mankato to Mississippi River 345 kV Transmission Project in Minnesota, will utilize the existing CAPX2020 system double circuit capability between North Rochester and Alma, Wisconsin. Xcel Energy, Dairyland, Rochester Public Utilities, and Southern Minnesota Municipal Power Agency have jointly filed certificate of need and route permit applications for the Mankato to Mississippi River 345 kV Transmission Project.

To accommodate the new second 345 kV circuit that is part of the Mankato to Mississippi River Transmission Project, the Dairyland 161 kV circuit must be relocated from the existing CapX2020 structures. This relocation is necessary to ensure continued power supply to the Wabaco Substation, which is crucial for maintaining reliability in the town of Plainview and surrounding areas. The new Kellogg Substation is required because the Mankato to Mississippi River 345 kV Transmission Project's circuit across the Mississippi River will eliminate Dairyland's existing LN340 69 kV transmission line Mississippi River crossing and connection into the Alma Substation in Wisconsin. The new Kellogg Substation will supply the LN340 69 kV transmission line. Finally, constructing a 161 kV transmission path between Wabaco and Alma will maintain existing transmission capacity and generation outlet provided by the transmission line.

Regulatory Background

The proposed project requires a route permit from the Commission. In its May 7, 2024, order, the Commission initially authorized joint hearings and combined environmental review for two approvals, a certificate of need and a route permit; however, the applicant subsequently requested to withdraw its certificate of need application. The Commission approved this request on June 25, 2024. Accordingly, EERA staff is preparing an environmental assessment (EA) that will inform Commission decisions solely on the applicant's route permit application. The first step in preparing the EA is scoping. The purpose of scoping is to provide citizens, local governments, tribal governments, and agencies an opportunity to focus the EA on those issues and alternatives that are relevant to the proposed project.

Scoping Process

The EA scoping process has two primary purposes: (1) to gather public input on the impacts, mitigation measures, and alternatives to study in the EA, and (2) to focus the EA on those impacts, mitigation measures, and alternatives that will aid in the Commission's decision on the route permit.

EERA staff gathered input on the EA scope through two public meetings and an associated comment period. This scoping decision identifies potential impacts and mitigation measures that will be analyzed in the EA, including project routing alternatives.

Public Scoping Meetings

Commission and EERA staff held two public information and EA scoping meetings. One meeting was in-person, and one meeting was virtual. The in-person meeting was held on June 12, 2024, at Saint Agnes Hall, Kellogg, Minnesota. The virtual meeting was held on June 11, 2024. No members of the public attended the virtual meeting. Approximately 25 members of the public attended the meeting in Kellogg, Minnesota.

Comments were received from three persons at these meetings, who expressed concern on a variety of potential impacts associated with the project, including impacts to land use and agricultural production, in particular, dairy farming, and potential impacts to human health.

Public Comments

A 30-day comment period, which closed on June 26, 2024, provided the public an opportunity to submit comments to EERA staff on potential impacts and mitigation measures for consideration during the EA scope development process. Comments were received from one state agency, one labor union, the applicant, and from 22 citizens.[1] Several of these comments proposed specific route alternatives for consideration in the EA.

[1] June 16, 2024, scoping comment letter from the Minnesota Department of Transportation (MnDOT). [eDocket No. 20246-207970-01]. June 26, 2024, scoping comment letter from Operating Engineers Local 49 and North Central States Regional Council of Carpenters. [eDocket No. 20246-207972-01]. June 26, 2024, Dairyland Power Cooperative scoping comment letter. [eDocket No. 20246-207981-01]. Comments on the EA from the Public included: Mr. Eric and Ms. Nicole Bartsch [eDockets Nos. 20247-208288-02 and 20247-208289-01]; Mr. Jason Klassen [eDocket No. 20247-208291-01]; Mr. Leo and Ms. Jane Kottschade [eDocket No. 20247-208292-01]; Mr. Gary Lehnertz [eDocket No. 20247-208293-02]; Mr. Bart McDonough [eDocket No. 20247-208306-01]; Mr. Tom Miller [eDocket No. 20247-208307-01]; Ms. Elizabeth and Mr. Ron Sanders [eDocket No. 20247-208308-02]; Ms. Cindy Stamschror [eDocket No. 20247-208309-01] and Mr. Jack Stamschror [eDocket No. 20247-208310-02]; Mr. Darrin Young [eDocket No. 20247-208311-02], Mr. Gary Young [eDocket No. 20247-208312-02], Mr. Maurice Young [eDocket No. 20247-208314-01] and, Ms. Rita Young [eDocket No. 20247-208313-01]; Mr. Gene Zarling [eDocket No. 20247-208316-02], Mr. James Zarling [eDocket No. 20247-208317-02], Mr. Joseph Zarling [eDocket No. 20247-208318-01], and, Mr. Kent Zarling [eDocket No. 20247-208319-01]. A group comment was submitted in-person on June 25,

Agency Comments

The Minnesota Department of Transportation (MnDOT) provided feedback on the application, highlighting potential impacts on various state and US highways.[2] MnDOT emphasized the need for coordination regarding highway construction activities and oversize load transportation, suggesting regular communication with MnDOT's District 6. Additionally, MnDOT's Office of Environmental Stewardship (OES) reviewed the application and outlined potential environmental concerns applicable permits and guidance, as well as permit requirements.

The applicant and its contractors were advised to adhere to MnDOT's utility accommodation policies and obtain necessary permits for pole placement and aerial encroachments. MnDOT noted specific expectations on pole structure placement and reserved the right for post-construction inspections on MnDOT right-of-way to determine compliance Commission and MnDOT permit conditions.[3] MnDOT underscored the importance of continued coordination throughout the project's lifespan and provided contact information for district specialists. MnDOT expressed its commitment to collaborating with relevant stakeholders to address potential impacts on the state highway system, public safety, and environmental areas of concern.

Applicant Comments

In its route permit application, the applicant reviewed route alternatives for their 161 kV transmission line, relying in part on route alternatives evaluated as part of the CAPX2020 project for comparison to their proposed route.[4] Through its scoping comment letter, the applicant provided an additional route segment alternative for inclusion in the EA.[5]

In a separate response to comments, the applicant requested that EERA remove route segment alternatives G and H from further consideration in the EA.[6] EERA staff recommended that route segment alternative G remain in the EA scope, as it involves land use issues and natural habitat concerns that would benefit from further evaluation. EERA agreed with the applicant that route segment alternative H should be removed from further analysis in the EA as the proposed route alternative is not materially different from the applicant's proposed route.

Commission Review

On August 30, 2024, EERA staff provided the Commission with a summary of the EA scoping process.[7] The summary discussed the routing alternatives that were proposed during the scoping process and those alternatives that the Department recommended for inclusion in the scope of the EA. On

2024, by Mr. Maurice Young, Messrs. Kent, James, Joseph, and Gene Zarling, Ms. Jane and Mr. Leo Kottschade, and Mr. Eric Bartsch [eDocket No. 20247-208290-01] herein referred to as "Community Comment."

[2] June 16, 2024, scoping comment letter from the Minnesota Department of Transportation (MnDOT). [eDocket No. 20246-207970-01].

[3] Ibid, page 2.

[4] March 27, 2024, Dairyland Power Cooperative route permit application. [eDocket No. 20243-204688-06].

[5] June 26, 2024, Dairyland Power Cooperative scoping comment letter. [eDocket No. 20246-207981-01]

[6] July 10, 2024, Dairyland Power Cooperative reply to scoping comments. [eDocket No. 20247-208470-01].

[7] August 30, 2024, Minnesota Department of Commerce, EERA Comments and Recommendations on the Scoping Process and Routing Alternatives for the Dairyland Power Cooperative 161 kV Wabasha Transmission Line Relocation Project. [eDocket Nos.20248-209903-01 and 20248-209903-02].

September 17, 2024, the Commission accepted EERA's recommendations.[8] The Commission adopted EERA staff's route and alignment recommendations, also accepting three alternatives received from the public after the close of the public comment period, for further analysis in the EA.[9]

HAVING REVIEWED THE MATTER, consulted with Department staff, and in accordance with Minnesota Rule 7850.3700, I hereby make the following scoping decision:

MATTERS TO BE ADDRESSED

The issues outlined below will be analyzed in the EA for the proposed Dairyland Power Cooperative 161 kV Wabasha transmission line relocation project. The EA will describe the project and the human and environmental resources of the project area and will provide information on the potential project impacts as they relate to the topics outlined in this scoping decision, as well as possible mitigation measures. It will identify impacts that cannot be avoided, irretrievable commitments of resources, as well as permits from other government entities that may be required for the project. The EA will discuss the relative merits of the route alternatives studied in the EA using the routing factors found in Minnesota Rule 7850.4100.

I. GENERAL DESCRIPTION OF THE PROJECT
- A. Project Description
- B. Project Purpose
- C. Route Description
  1. Route Width
  2. Right-of-Way
- D. Project Costs

II. REGULATORY FRAMEWORK
- A. High Voltage Transmission Line Route Permit
- B. Environmental Review Process
- C. Other Permits and Approvals

III. ENGINEERING AND DESIGN
- A. Transmission Line Structures
- B. Transmission Line Conductors
- C. Substations

IV. CONSTRUCTION
- A. Right-of-Way Acquisition
- B. Construction

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[8] September 17, 2024, Minnesota Public Utilities Commission Accepted Dairyland Power Cooperative's proposed route and the routing alternative noted in Table 1 of the Department of Commerce – Energy Environmental Review and Analysis' August 30, 2024, comments. [eDocket Nos. 20249-210260-01 and 20249-210260-02].

[9] In their March 6, 2024, order [eDocket No. 20243-204135-01], the Minnesota Public Utilities Commission (PUC) accepted route and alignment alternatives submitted after the close of the November 21, 2023, public comment deadline. Specifically, the PUC accepted Option 8, items A-C (Route K; Alternative Alignment 14; Karen Burthwick 1), identified in the PUC Staff Briefing Papers [eDocket No. 20242-203684-02].

C. Restoration
D. Damage Compensation
E. Operation and Maintenance

V. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

The EA will include a discussion of the human and environmental resources potentially impacted by the proposed project and the routing alternatives described herein (Section VI). Potential impacts, both positive and negative, of both the project and each alternative will be described. The EA will describe mitigation measures that could reasonably be implemented to reduce or eliminate the identified impacts. The EA will also describe any unavoidable impacts resulting from proposed project implementation.

The EA data and analyses will be commensurate with the importance of potential impacts and the relevance of the information for consideration of mitigation measures.[10] Additionally, EERA staff will consider the relationship between the cost of data and analyses and the relevance and importance of the information in determining the level of detail of information to be prepared for the EA. Less important material may be summarized, consolidated, or simply referenced.

If relevant information cannot be obtained within timelines prescribed by statute and rule, or if the costs of obtaining such information is excessive, or the means to obtain it is not known, EERA staff will include a statement in the EA that such information is incomplete or unavailable and the relevance of that information in evaluating potential impacts.[11]

A. Environmental Setting
B. Socioeconomics
    1. Environmental Justice
C. Human Settlements
    1. Noise
    2. Aesthetics
    3. Displacement
    4. Property Values
    5. Zoning and Land Use Compatibility
    6. Public Services
    7. Electronic Interference
D. Public Health and Safety
    1. Electric and Magnetic Fields
    2. Implantable Medical Devices
    3. Stray Voltage
    4. Induced Voltage
E. Land Based Economies
    1. Agriculture
    2. Forestry
    3. Mining
    4. Recreation and Tourism
F. Archaeological and Historic Resources

[10] The Minnesota 7850 rules are silent on this point. The EERA relies on Minnesota Rule 4410.2300 to inform EA practice.
[11] Ibid, see Minnesota Rule 4410.2500.

G. Natural Environment
   1. Air Quality
   2. Greenhouse Gas Emissions
   3. Climate Change and Project Resilience
   4. Water Resources
      a) Surface Waters
      b) Groundwater
      c) Wetlands
   5. Soils
   6. Vegetation
   7. Wildlife
H. Threatened / Endangered / Rare and Unique Natural Resources
I. Electric System Reliability
J. Operation and Maintenance Costs that are Design Dependent
K. Adverse Impacts that Cannot be Avoided
L. Irreversible and Irretrievable Commitments of Resources
M. Cumulative Potential Effects

VI. ROUTES AND ROUTE ALTERNATIVES TO BE EVALUATED IN THE ENVIRONMENTAL ASSESSMENT

The EA will evaluate the route proposed in the applicant's route permit application and as modified by the applicant's comments (See Map 1). Additionally, the EA will evaluate the route and alignment alternatives accepted by the Commission in its order of September 17, 2024, as summarized below:

Route Segment Alternative A

Several community members proposed Route Segment Alternative – A (RSA – A) with two alignment variations (AAA-1 and AAA-2). RSA – A involves adjusting the applicant's proposed departure from the Dairyland 161 kV line about one mile south from its current location in Plainview Township (See Map 2).[12] From this new starting point, the route extends north for about three-quarters of a mile, crossing the CAPX2020 high voltage line, then continues northwest for a quarter mile before following property lines for approximately seven-eighths of a mile, ultimately connecting with State Highway 42 in Highland Township.

Route Segment Alternative B

A member of the public provided Route Segment Alternative – B (RSA – B), which departs from Highway 42, for approximately two-thirds of a mile, crossing north on County Road 14 (Section 26, Highland Township), for approximately one-quarter mile, then turns east in Section 23, where it rejoins the Applicants' proposed route in the southwest quarter of Section 24, Highland Township (See Map 3).[13]

[12] June 25, 2024, scoping comment and proposed route alternative provided by Mr. Maurice Young, Messrs. Kent, James, Joseph, and Gene Zarling, Ms. Jane and Mr. Leo Kottschade, and Mr. Eric Bartsch [eDocket No. 20247-208290-01] herein referred to as "Community Comment." See also June 18, 2024, comment and route alternative proposal from Mr. Joseph Zarling [eDocket No. 20247-208318-01].

[13] June 24, 2024, scoping comment and proposed route alternative provided by Mr. Gary Lehnertz [eDocket No. 20247-208293-02] and the June 25, 2024, comment and proposed route alternative provided by Ms. Cindy Stamschror [eDocket No. 20247-208309-01].

Route Segment Alternative C

The applicant provided Route Segment Alternative - C (RSA – C) which is approximately 1.67 miles in length, departing from the proposed route near State Highway 42, at the northwest quarter of the southeast quarter of Section 26, Highland Township, where it follows County Road 14 north for approximately 1-mile, then turns east at the northwest quarter of the southeast quarter of Section 23 for approximately 0.64 miles, then rejoining the proposed route along State Highway 42 in the northwest quarter of the southwest quarter of Section 24, Highland Township (See Map 4).[14]

Route Segment Alternative D

A member of the pubic provided Route Segment Alternative D (RSA – D) which departs from State Highway 42 for approximately two-thirds of a mile (Section 26, Highland Township), then crossing north on County Road 14 into Section 23, Highland Township, for approximately two-thirds of a mile, then east, rejoining the applicant's proposed route in the southwest quarter of Section 24, Highland Township, along State Highway 42 (See Map 5).[15]

Route Segment Alternative E

Members of the public provided Route Segment Alternative – E (RSA – E) which begins from the applicant's proposed route, at the northwest quarter of the southeast quarter of Section 26, Highland Township along State Highway 42, then north for approximately two-thirds of a mile, crossing County Highway 14, where it turns to the northeast, from the center of Section 23, Highland Township, extending to the southern edge of the southwest quarter of Section 13, Highland Township, until it rejoins the applicant's proposed route at State Highway 42 (See Map 6).[16] RSA – E features two alignment alternatives, designated EAA-1 and EAA-2.

Route Segment Alternative F

The proposed Route Segment Alternative – F (RSA – F) was submitted by a member of the public and begins at the northwest quarter of the southeast quarter of Section 26, Highland Township, extending north on County Highway 14 for approximately one and two third miles (See Map 7).[17] It then extends due east for approximately three quarters of a mile along the northern Section boundary of the northeast quarter of Section 23, to the southwest quarter of Section 13, then extending to the northeast for approximately two thirds of a mile until it rejoins the applicant's proposed route at State Highway 42.

Route Segment Alternative G

Route Segment Alternative – G (RSA – G), submitted by a member of the public, features two alignment alternatives, GAA-1 and GAA-2 (See Map 8).[18] GAA-1 and GAA-2 depart and rejoin the applicant's proposed route at common points along the southern side of Highway 42, (Section 8, Watopa Township). They are distinguished through the way they rejoin the applicant's proposed route.

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[14] June 26, 2024, Dairyland Power Cooperative scoping comment letter. [eDocket No. 20246-207981-01]

[15] June 25, 2024, scoping comments and route proposal alternative provided by Ms. Cindy Stamschror [eDocket No. 20247-208309-01] and Mr. Jack Stamschror [eDocket No. 20247-208310-02].

[16] June 26, 2024, scoping comment and proposed route alternative from Mr. Jason Klassen [eDocket No. 20247-208291-01] and a June 25, 2024, scoping comment and proposed route alternative from Ms. Cindy Stamschror [eDocket No. 20247-208309-01] were combined to create this alternative route segment.

[17] June 25, 2024, scoping comments and proposed route alternative provided by Mr. Jason Klassen [eDocket No. 20247-208291-01].

[18] June 12, 2024, scoping comment and proposed route alternative provided by Mr. Tom Miller [eDocket No. 20247-208307-01].

VII. IDENTIFICATION OF PERMITS

The EA will include a list and description of permits from other government entities that may be required for the proposed project.

ISSUES OUTSIDE THE SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The EA will not consider the following:

A. Any route, route segment, or alignment alternative not specifically identified for study in this scoping decision.
B. The manner in which land owners are paid for transmission line right-of-way easements.
C. The following alternatives, proposed to mitigate potential impacts of the project during the scoping process, will not be included for further study in the EA:

Route Segment Alternative H

A landowner requested that the applicant shift the proposed route to the south of his property line.[19] The proposed route shift was designated as Route Segment Alternative – H (RSA – H) and follows the approximately one-half mile east-west orientation of the applicant's proposed route in Section 27, Greenfield Township (See Map 9). RSA – H is an approximate 100-meter shift of this portion of the applicant's proposed route to the south, following the landowners' property boundary, rather than crossing in the field. Given the relatively small adjustment in the project alignment, and the lack of an alleged impact that could be mitigated through this alternative, RSA – H will not be carried forward for further study in the EA.

SCHEDULE

The EA is anticipated to be completed and available January 30, 2025. Public hearings are anticipated to be held in February 2025 and will be held in the project area.

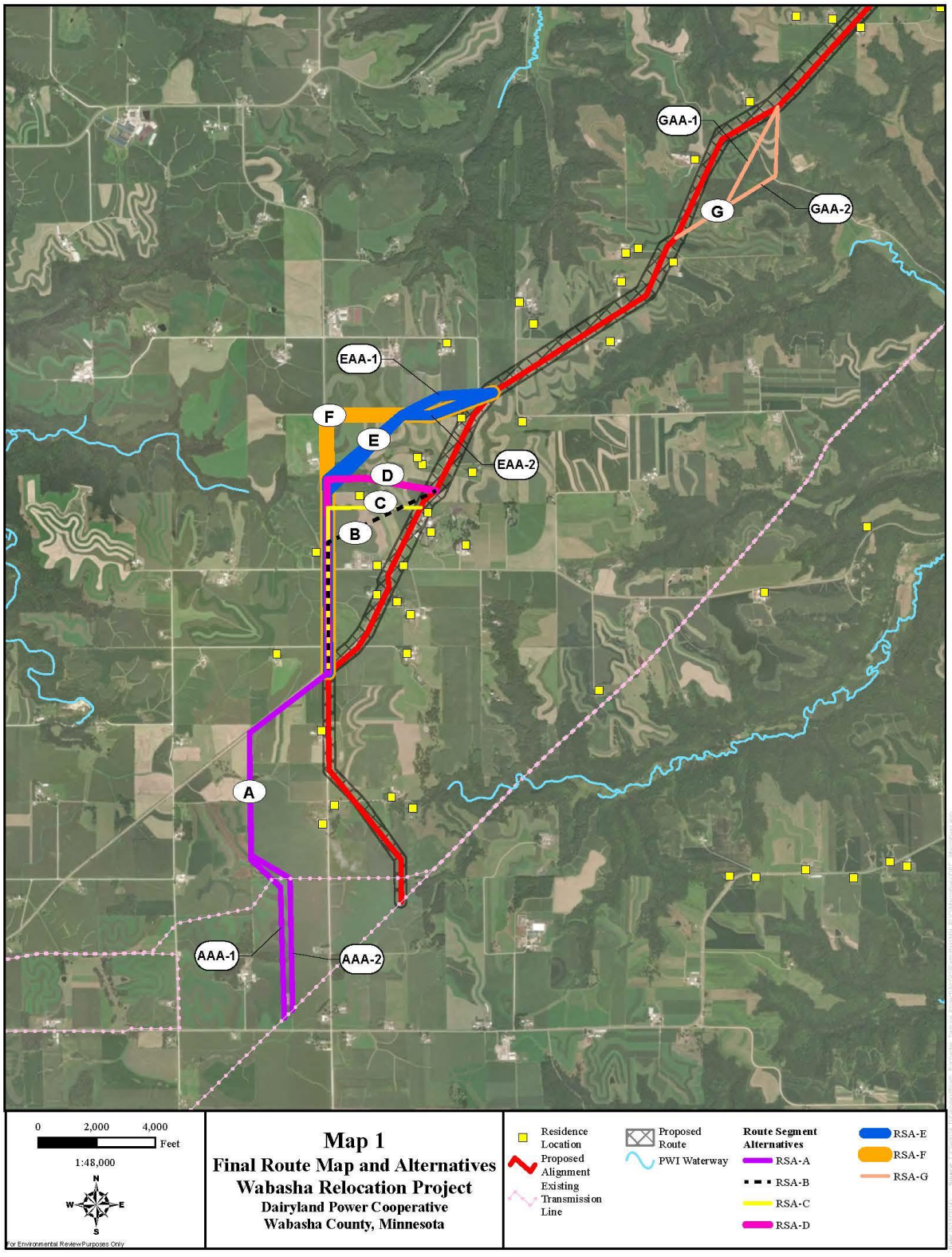
Signed this 24th day of September, 2024

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE

Pete Wyckoff

Pete Wyckoff, Deputy Commissioner

[19] June 12, 2024, scoping comment and proposed route alternative provided by Mr. Bart McDonough [eDocket No. 20247-208306-01].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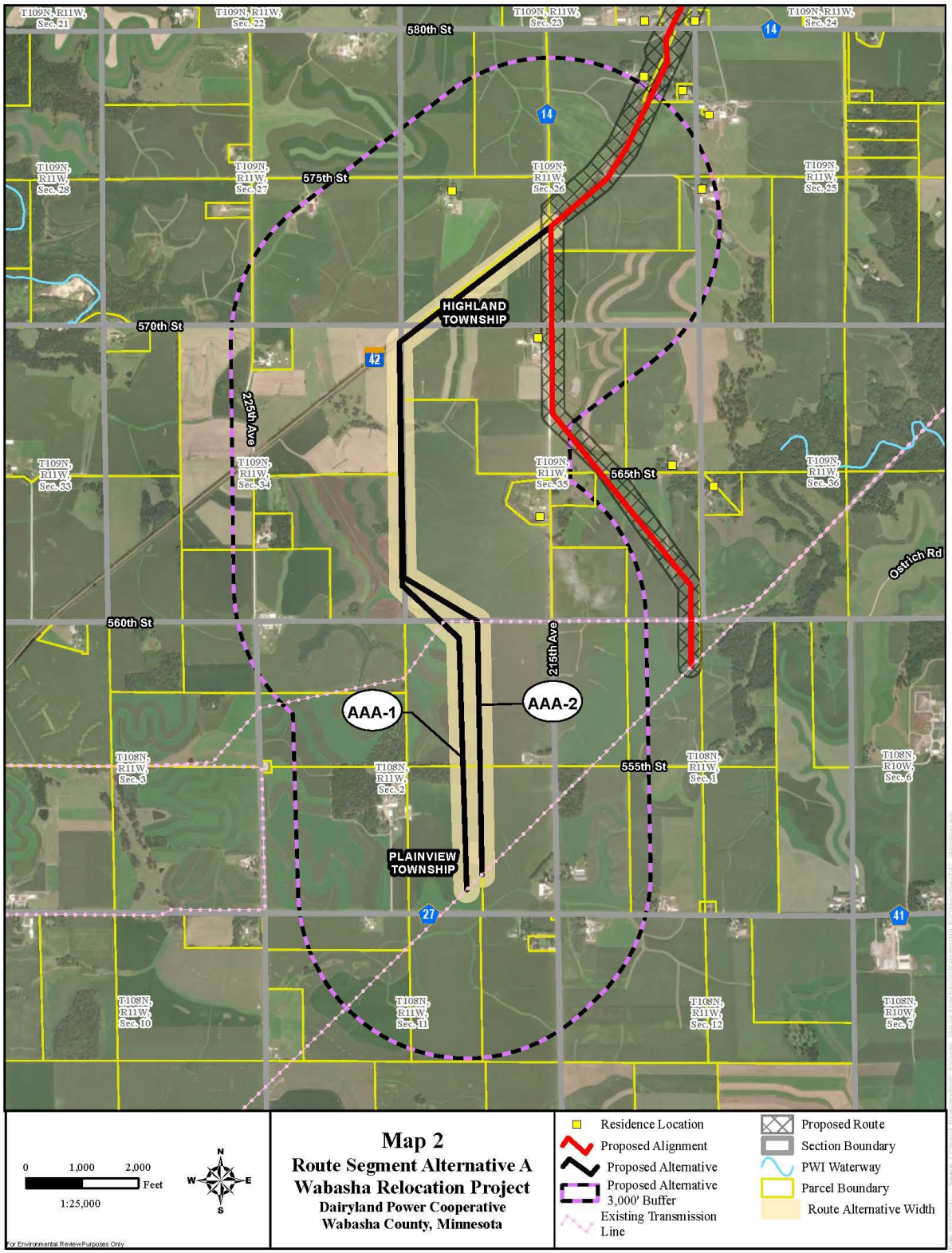
Map 1
Final Route Map and Alternatives
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Existing Transmission Line
Proposed Route
PWI Waterway
Route Segment Alternatives
RSA-A
RSA-B
RSA-C
RSA-D
RSA-E
RSA-F
RSA-G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570th St
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T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
565th St
T109N, R11W, Sec. 36
Ostrich Rd
560th St
215th Ave
AAA-1
AAA-2
T108N, R11W, Sec. 3
T108N, R11W, Sec. 2
555th St
T108N, R11W, Sec. 1
T108N, R10W, Sec. 6
PLAINVIEW TOWNSHIP
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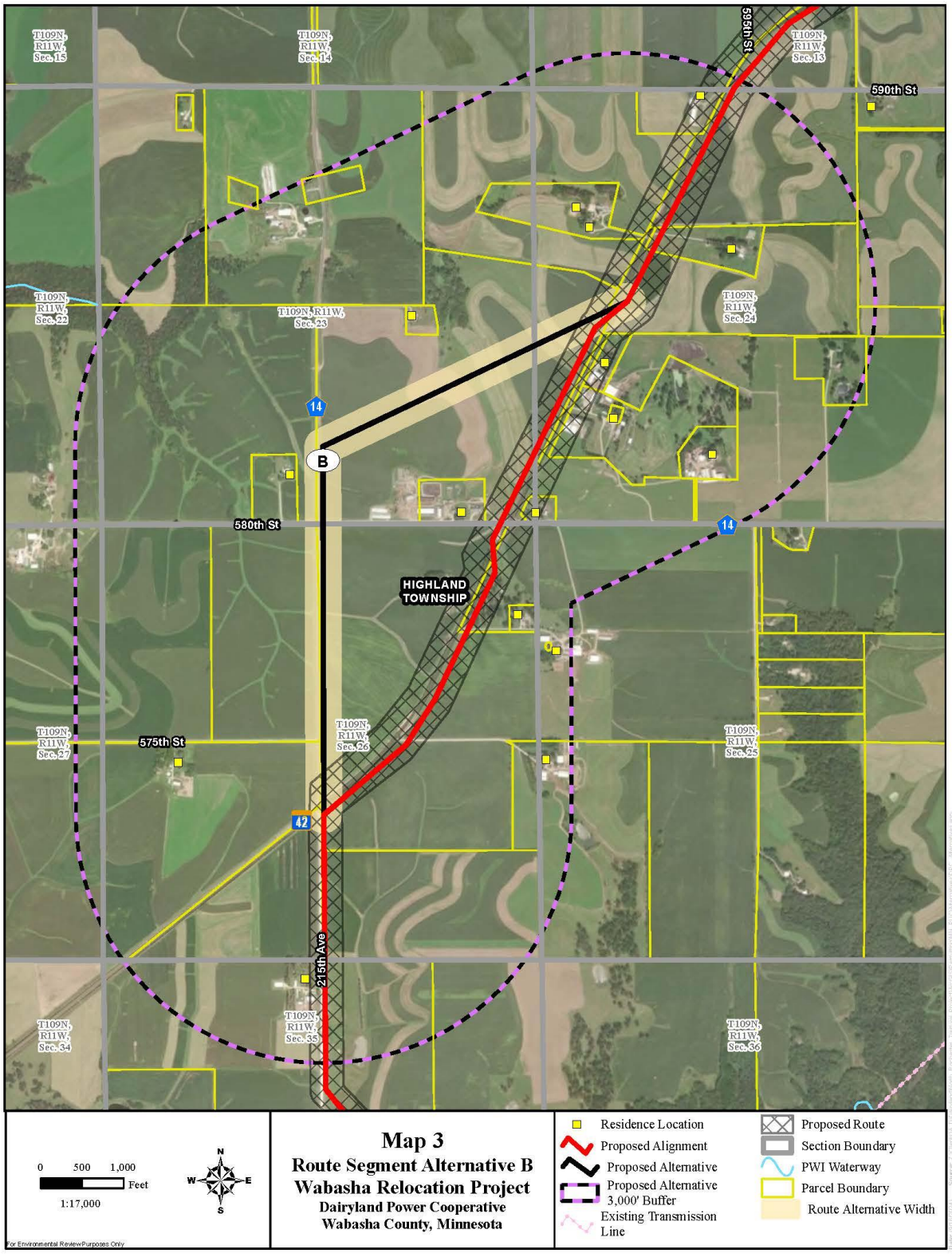
Map 2
Route Segment Alternative A
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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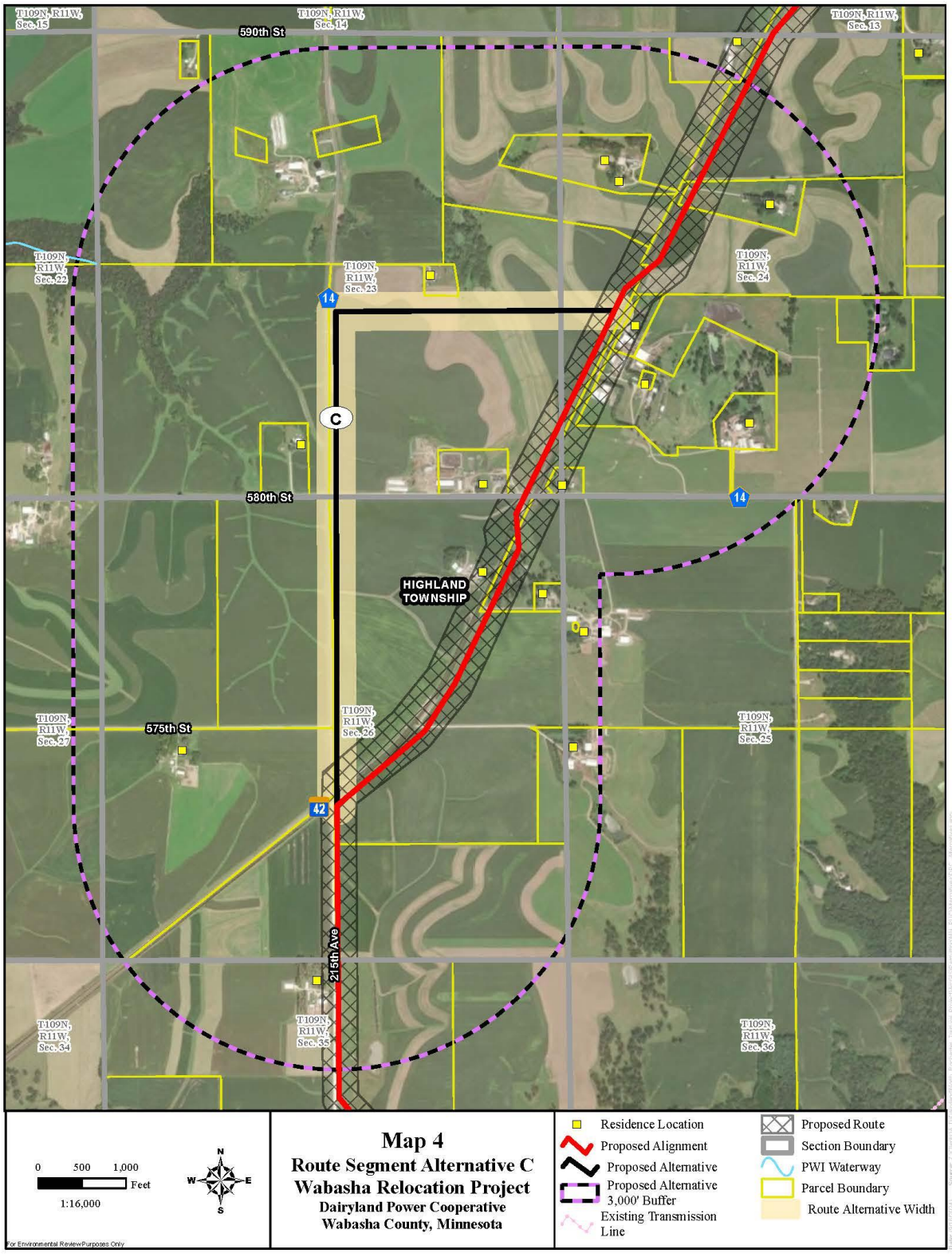
Map 3
Route Segment Alternative B
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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580th St
HIGHLAND TOWNSHIP
T109N, R11W, Sec. 27
575th St
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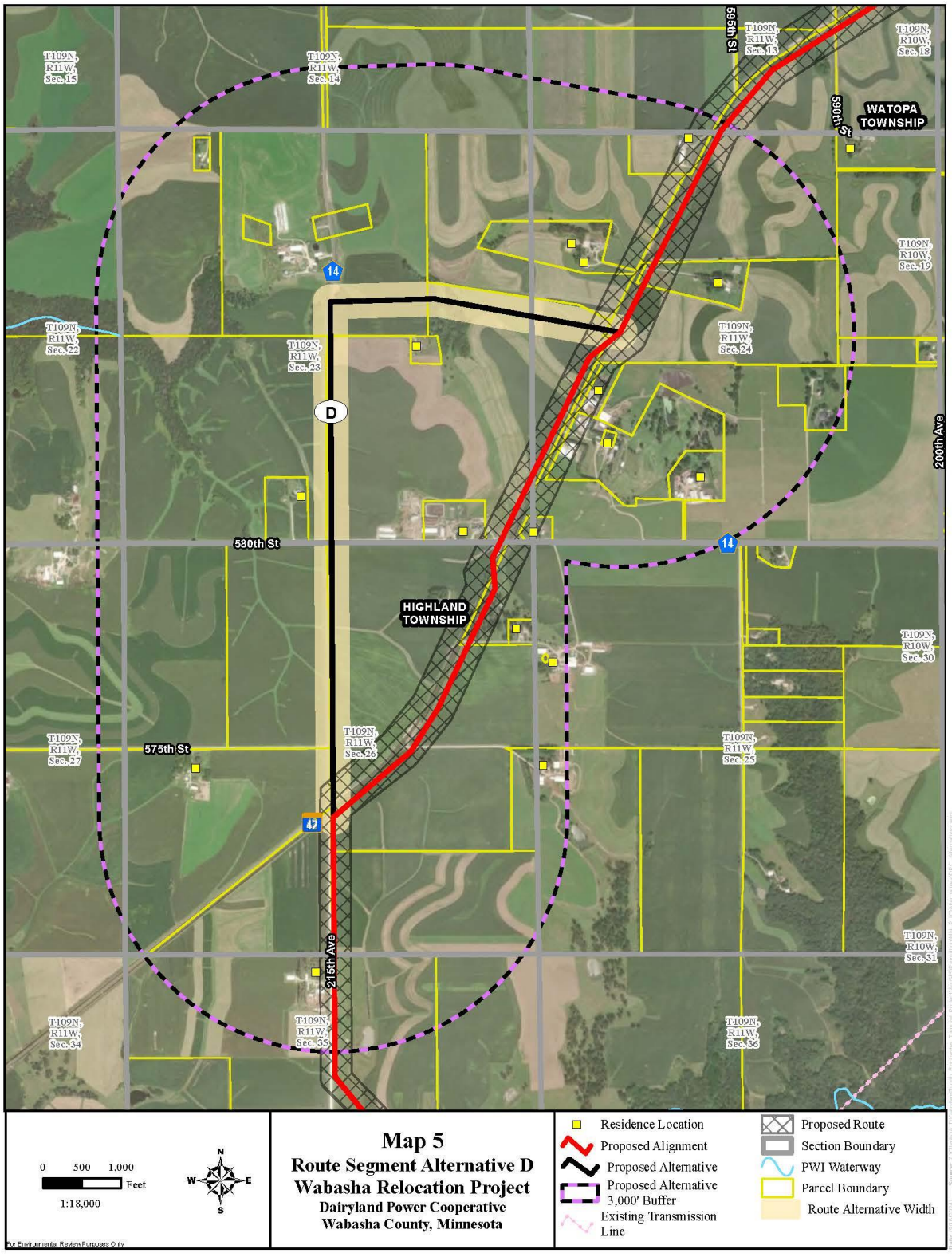
Map 4
Route Segment Alternative C
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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D
200th Ave
580th St
HIGHLAND TOWNSHIP
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T109N, R11W, Sec. 27
575th St
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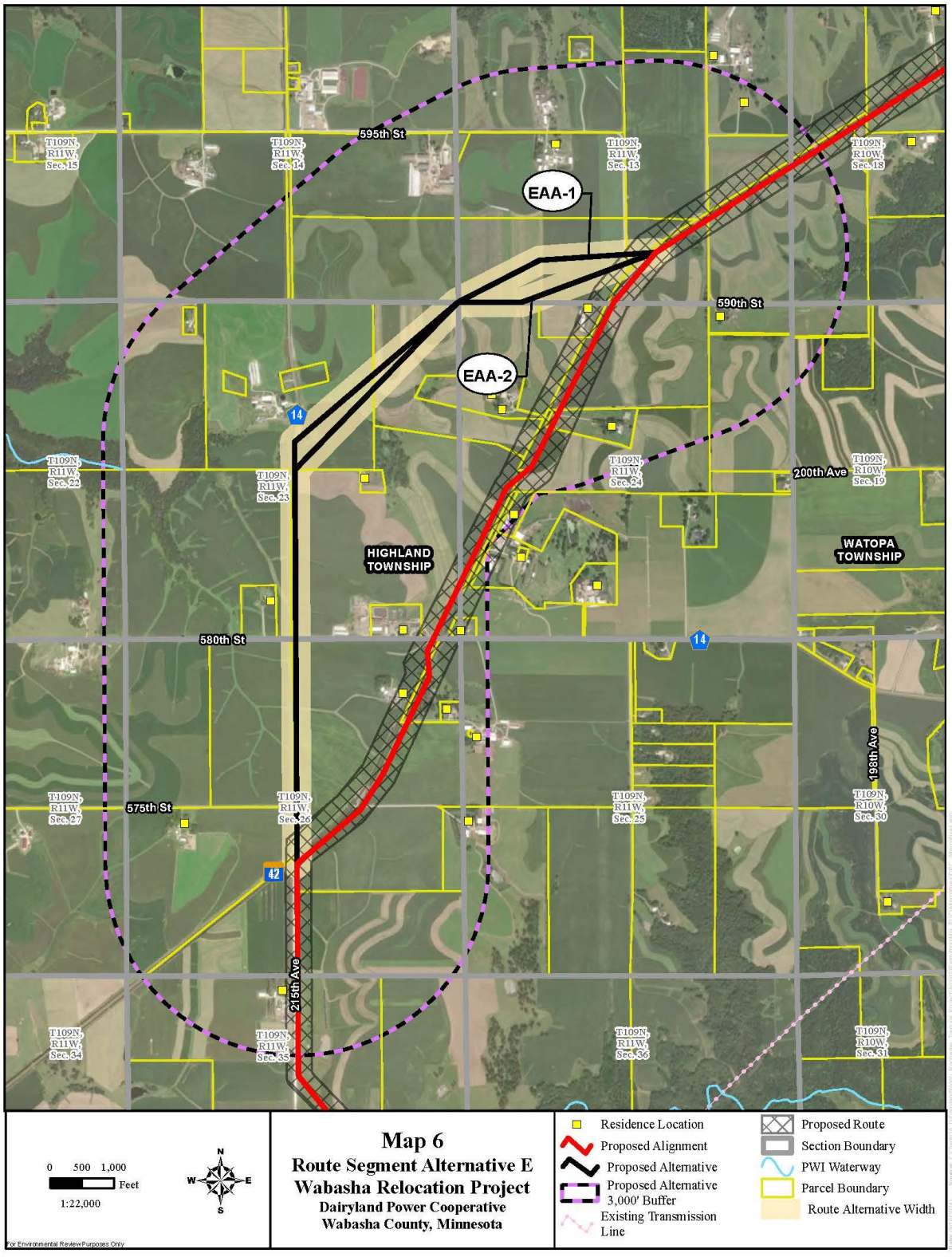
For Environmental Review Purposes Only
Map 5
Route Segment Alternative D
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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EAA-1
EAA-2
HIGHLAND TOWNSHIP
WATOPA TOWNSHIP
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T109N, R11W, Sec. 13
T109N, R10W, Sec. 18
T109N, R11W, Sec. 22
T109N, R11W, Sec. 23
T109N, R11W, Sec. 24
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T109N, R11W, Sec. 27
T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
T109N, R10W, Sec. 30
T109N, R11W, Sec. 34
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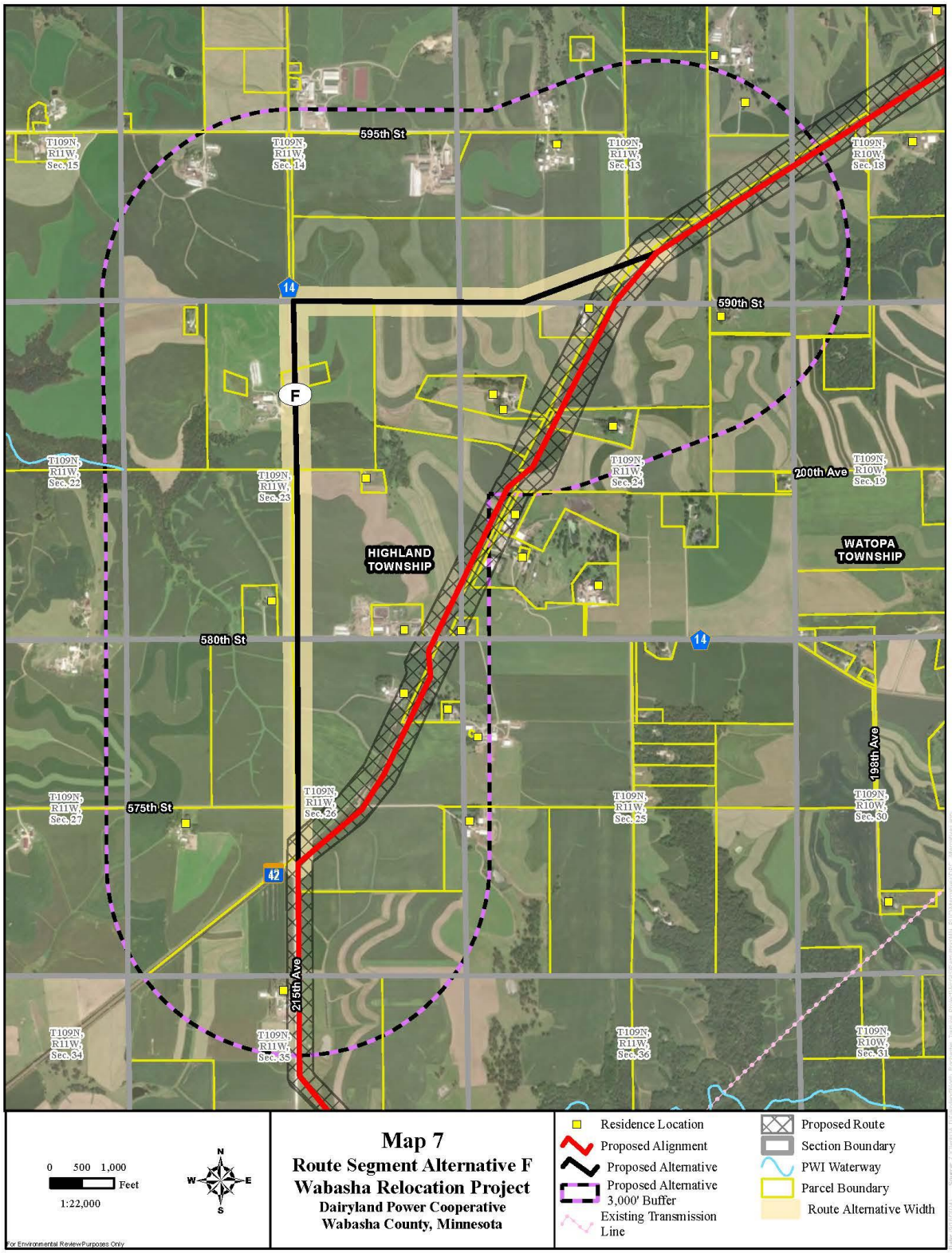
For Environmental Review Purposes Only
Map 6
Route Segment Alternative E
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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T109N, R10W, Sec. 31
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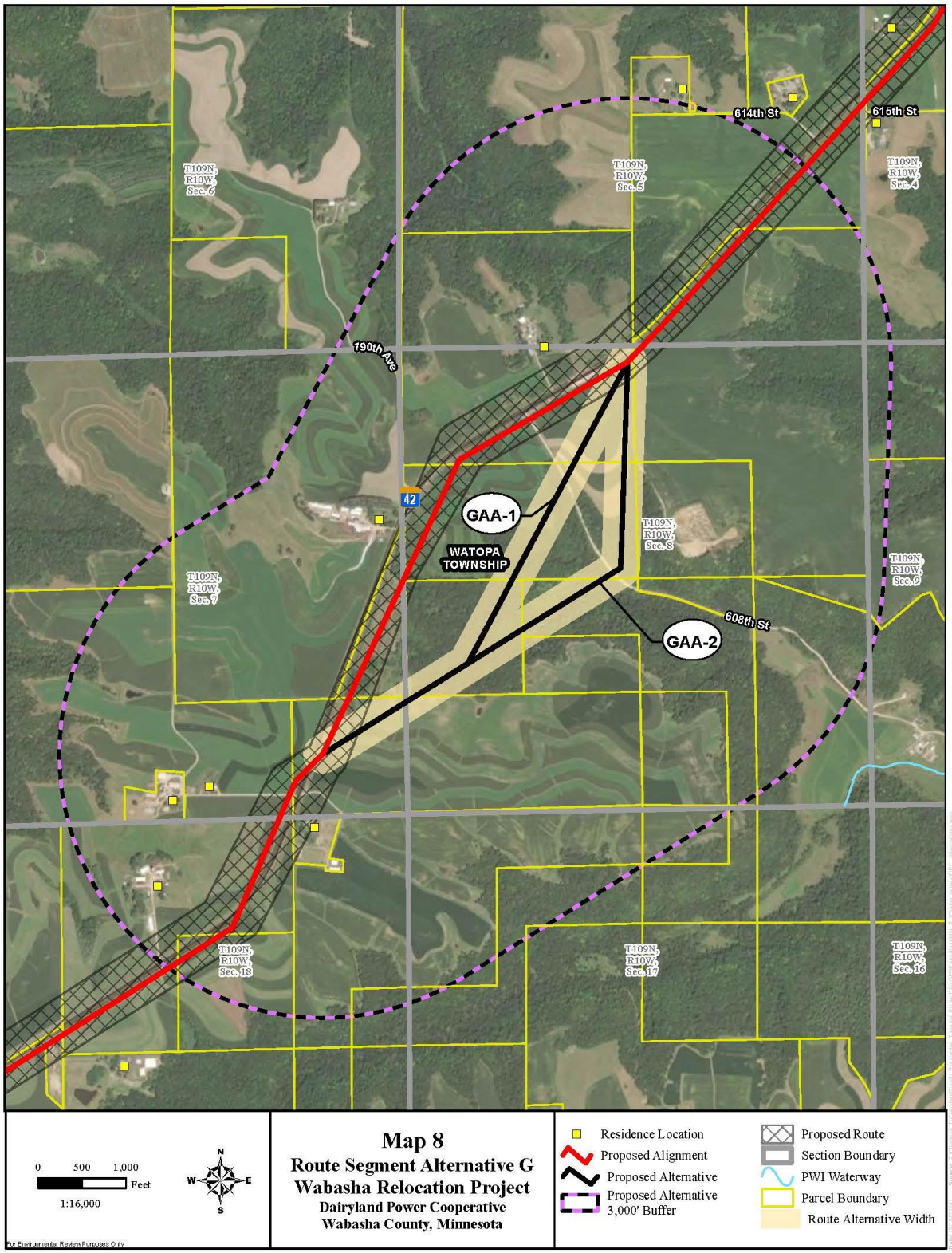
For Environmental Review Purposes Only
Map 7
Route Segment Alternative F
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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WATOPA TOWNSHIP
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T109N, R10W, Sec. 9
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GAA-2
T109N, R10W, Sec. 18
T109N, R10W, Sec. 17
T109N, R10W, Sec. 16
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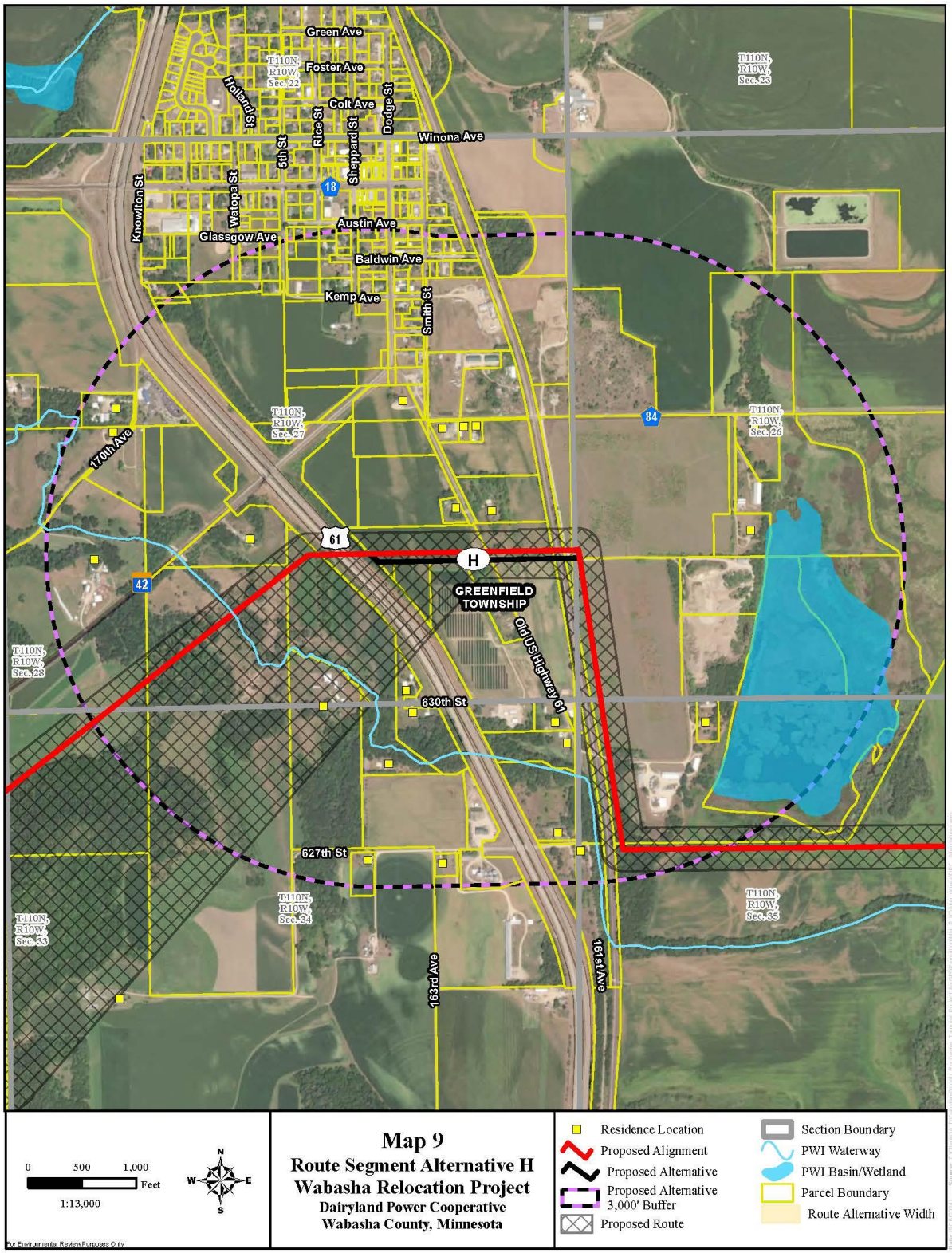
For Environmental Review Purposes Only
Map 8
Route Segment Alternative G
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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161st Ave
Holland St
Rice St
5th St
Sheppard St
Dodge St
Knowlton St
Watopa St
Smith St
Old US Highway 61
GREENFIELD TOWNSHIP
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T110N, R10W, Sec. 23
T110N, R10W, Sec. 26
T110N, R10W, Sec. 27
T110N, R10W, Sec. 28
T110N, R10W, Sec. 33
T110N, R10W, Sec. 34
T110N, R10W, Sec. 35
18
84
61
42
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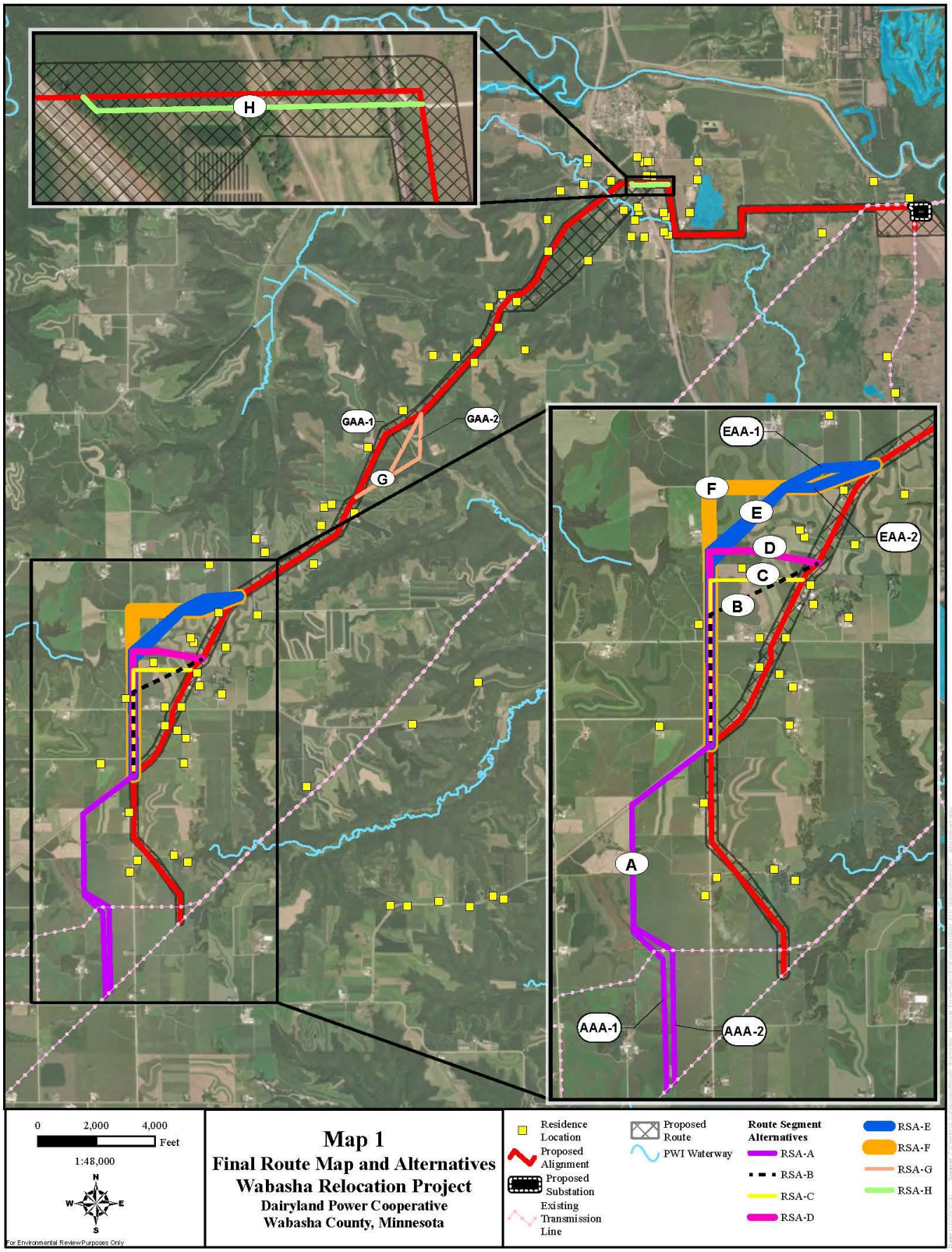
For Environmental Review Purposes Only
Map 9
Route Segment Alternative H
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Proposed Route
Section Boundary
PWI Waterway
PWI Basin/Wetland
Parcel Boundary
Route Alternative Width

APPENDIX B. AERIAL ROUTE MAPS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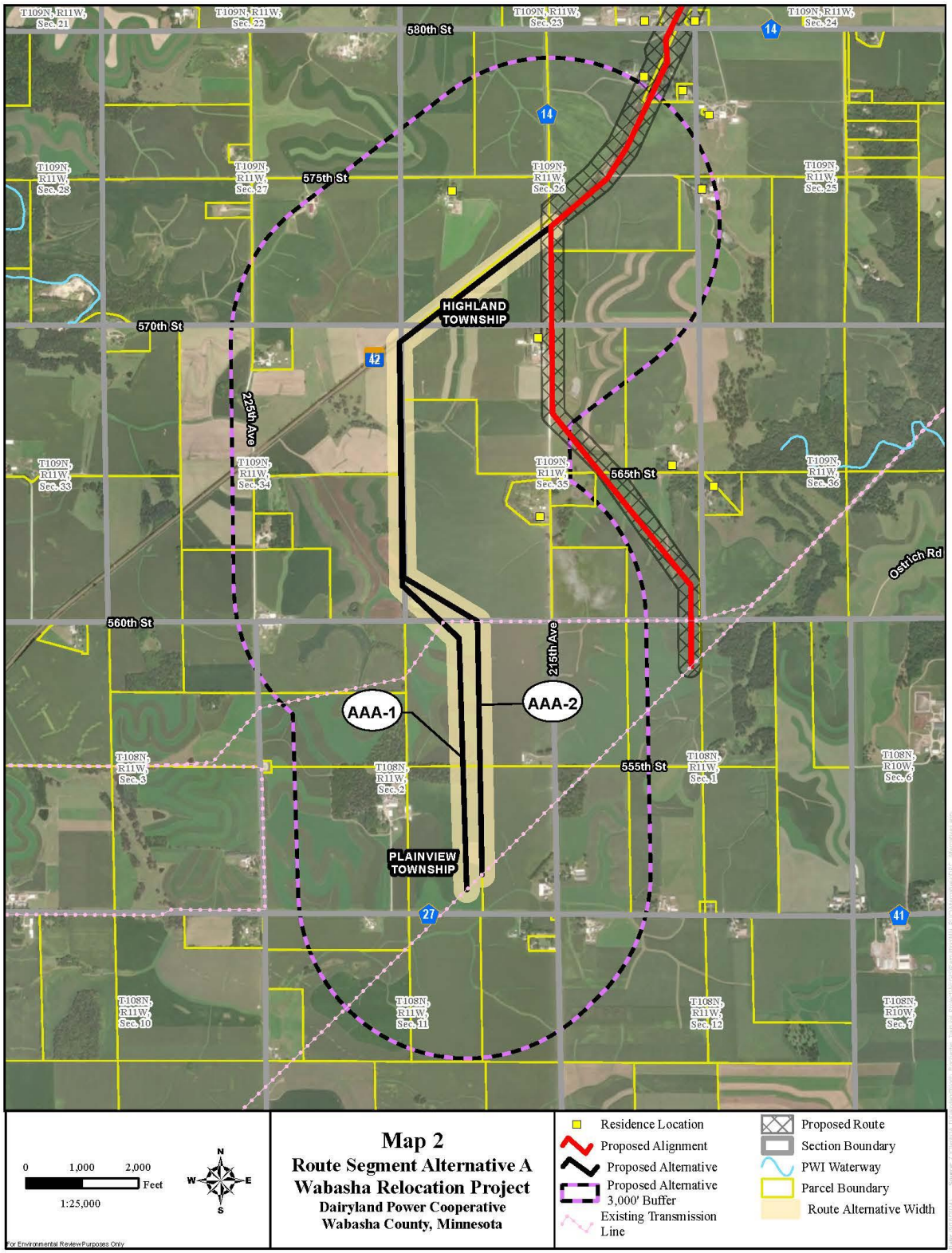
For Environmental Review Purposes Only
Map 1
Final Route Map and Alternatives
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Substation
Existing Transmission Line
Proposed Route
PWI Waterway
Route Segment Alternatives
RSA-A
RSA-B
RSA-C
RSA-D
RSA-E
RSA-F
RSA-G
RSA-H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575th St
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HIGHLAND TOWNSHIP
570th St
42
225th Ave
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T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
565th St
T109N, R11W, Sec. 36
Ostrich Rd
560th St
215th Ave
AAA-1
AAA-2
T108N, R11W, Sec. 3
T108N, R11W, Sec. 2
555th St
T108N, R11W, Sec. 1
T108N, R10W, Sec. 6
PLAINVIEW TOWNSHIP
27
41
T108N, R11W, Sec. 10
T108N, R11W, Sec. 11
T108N, R11W, Sec. 12
T108N, R10W, Sec. 7
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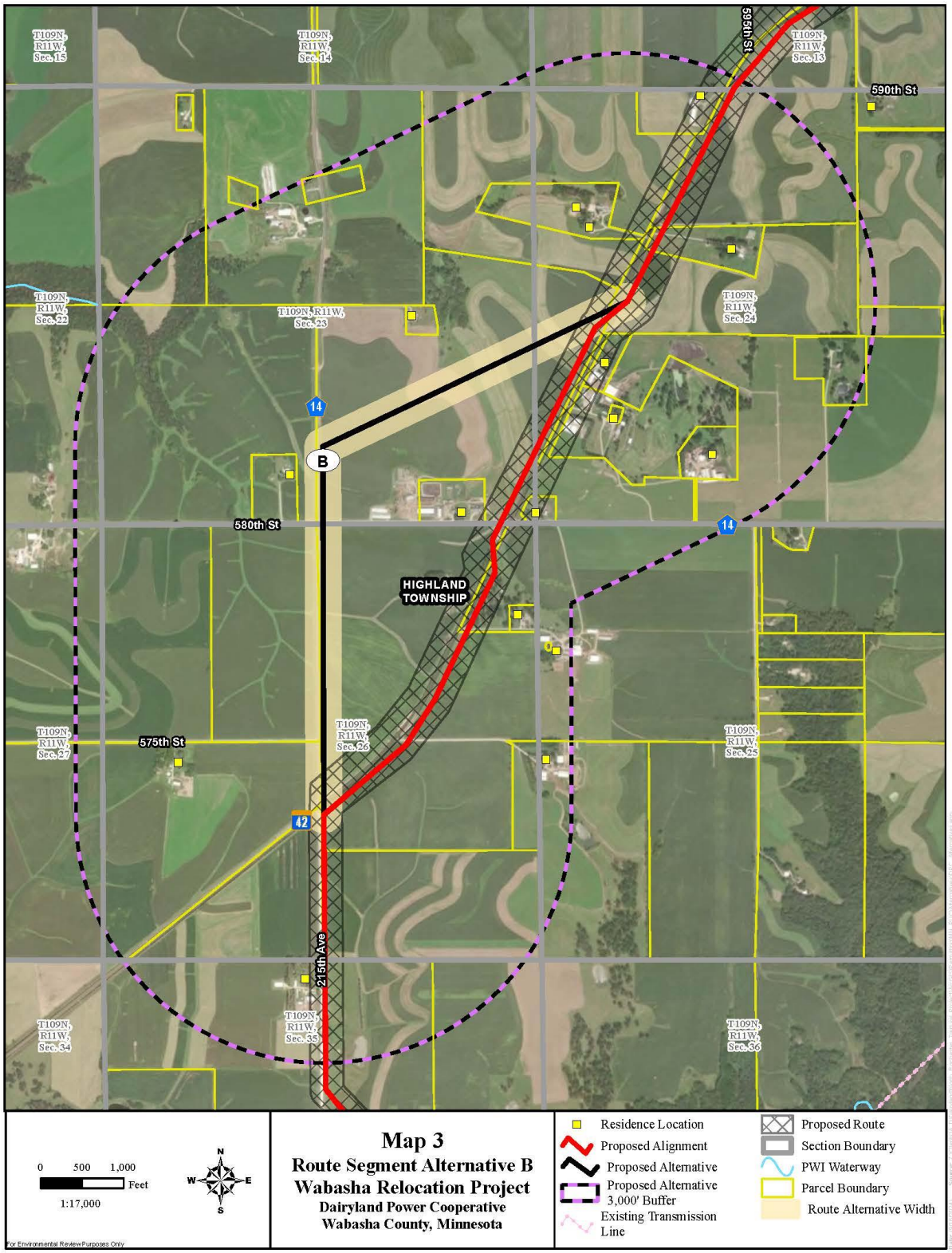
For Environmental Review Purposes Only
Map 2
Route Segment Alternative A
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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T109N, R11W, Sec. 24
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B
580th St
14
HIGHLAND TOWNSHIP
T109N, R11W, Sec. 27
575th St
T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
42
215th Ave
T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
T109N, R11W, Sec. 36
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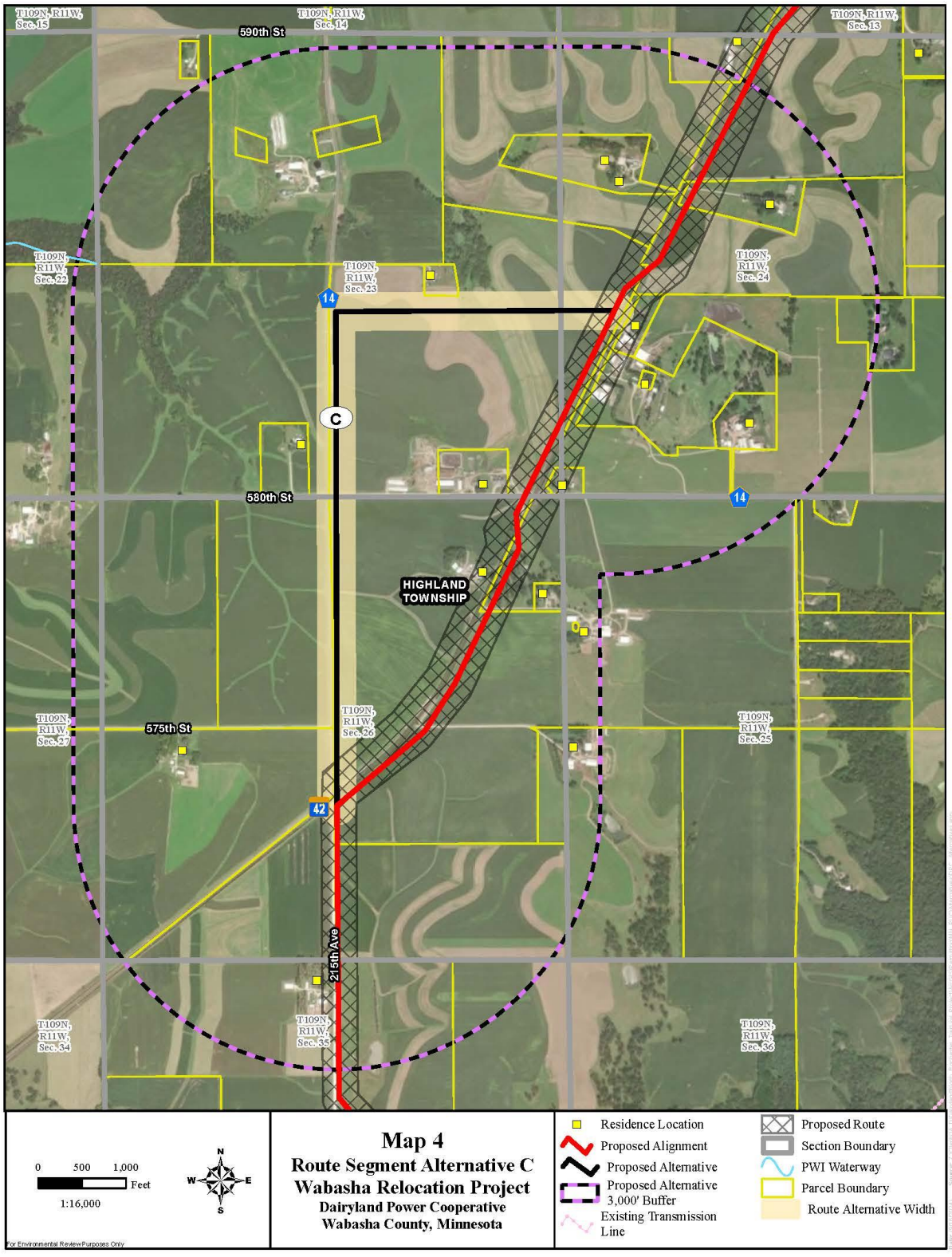
For Environmental Review Purposes Only
Map 3
Route Segment Alternative B
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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T109N, R11W, Sec. 24
14
C
580th St
HIGHLAND TOWNSHIP
T109N, R11W, Sec. 27
575th St
T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
42
215th Ave
T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
T109N, R11W, Sec. 36
0 500 1,000 Feet
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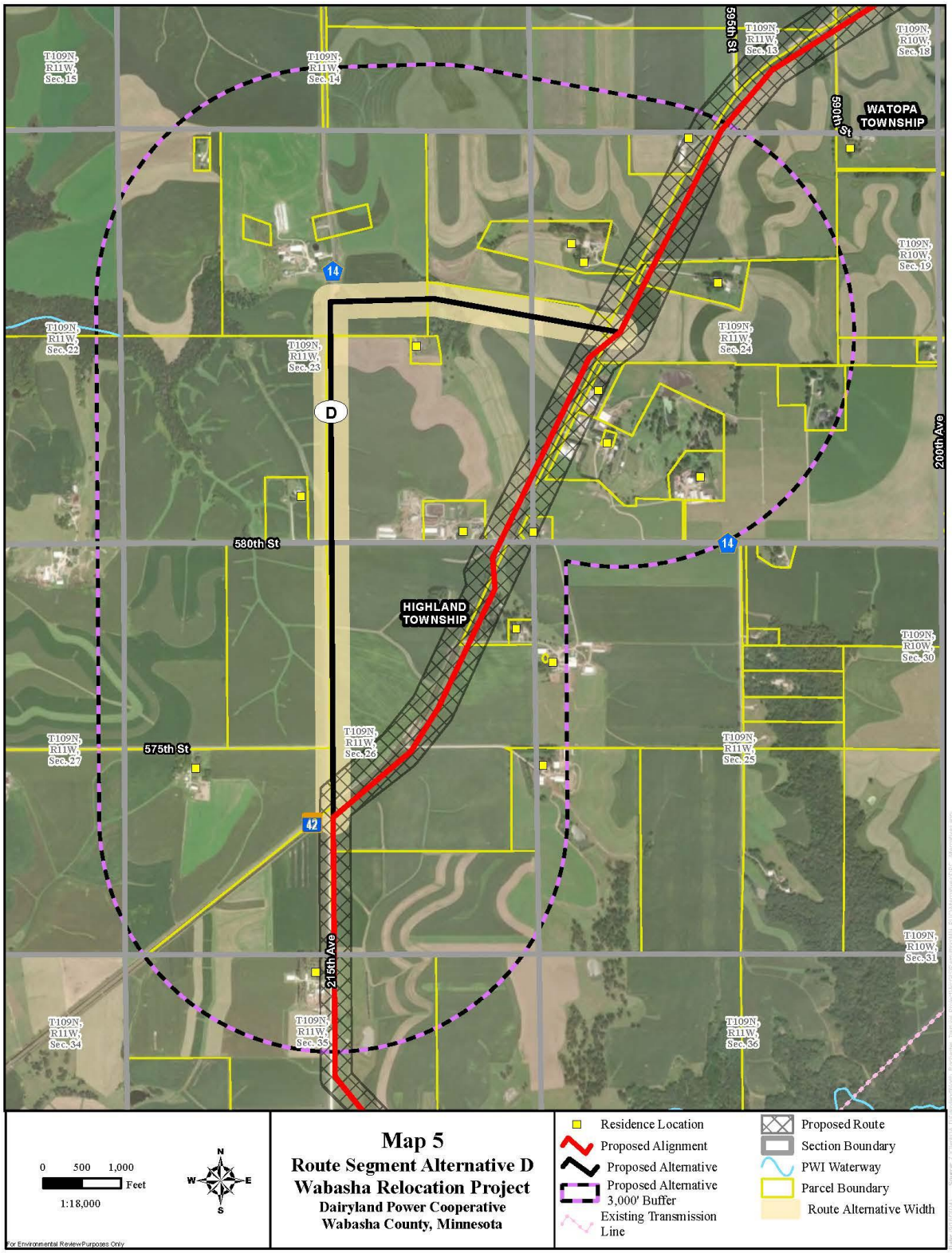
For Environmental Review Purposes Only
Map 4
Route Segment Alternative C
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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T109N, R11W, Sec. 23
T109N, R11W, Sec. 24
D
200th Ave
580th St
HIGHLAND TOWNSHIP
T109N, R10W, Sec. 30
T109N, R11W, Sec. 27
575th St
T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
215th Ave
T109N, R10W, Sec. 31
T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
T109N, R11W, Sec. 36
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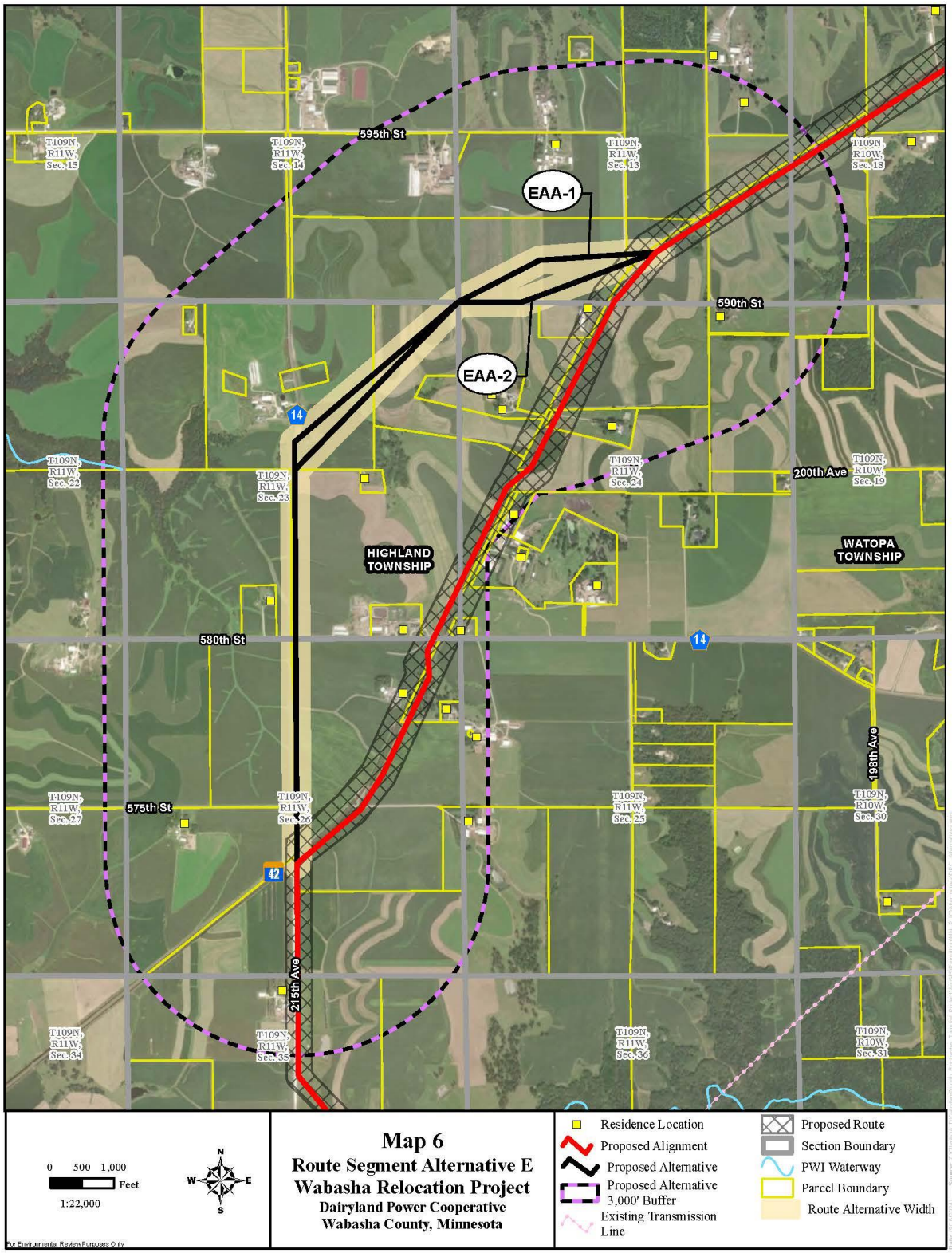
For Environmental Review Purposes Only
Map 5
Route Segment Alternative D
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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EAA-2
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WATOPA TOWNSHIP
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T109N, R10W, Sec. 18
T109N, R11W, Sec. 22
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T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
T109N, R10W, Sec. 30
T109N, R11W, Sec. 34
T109N, R11W, Sec. 35
T109N, R11W, Sec. 36
T109N, R10W, Sec. 31
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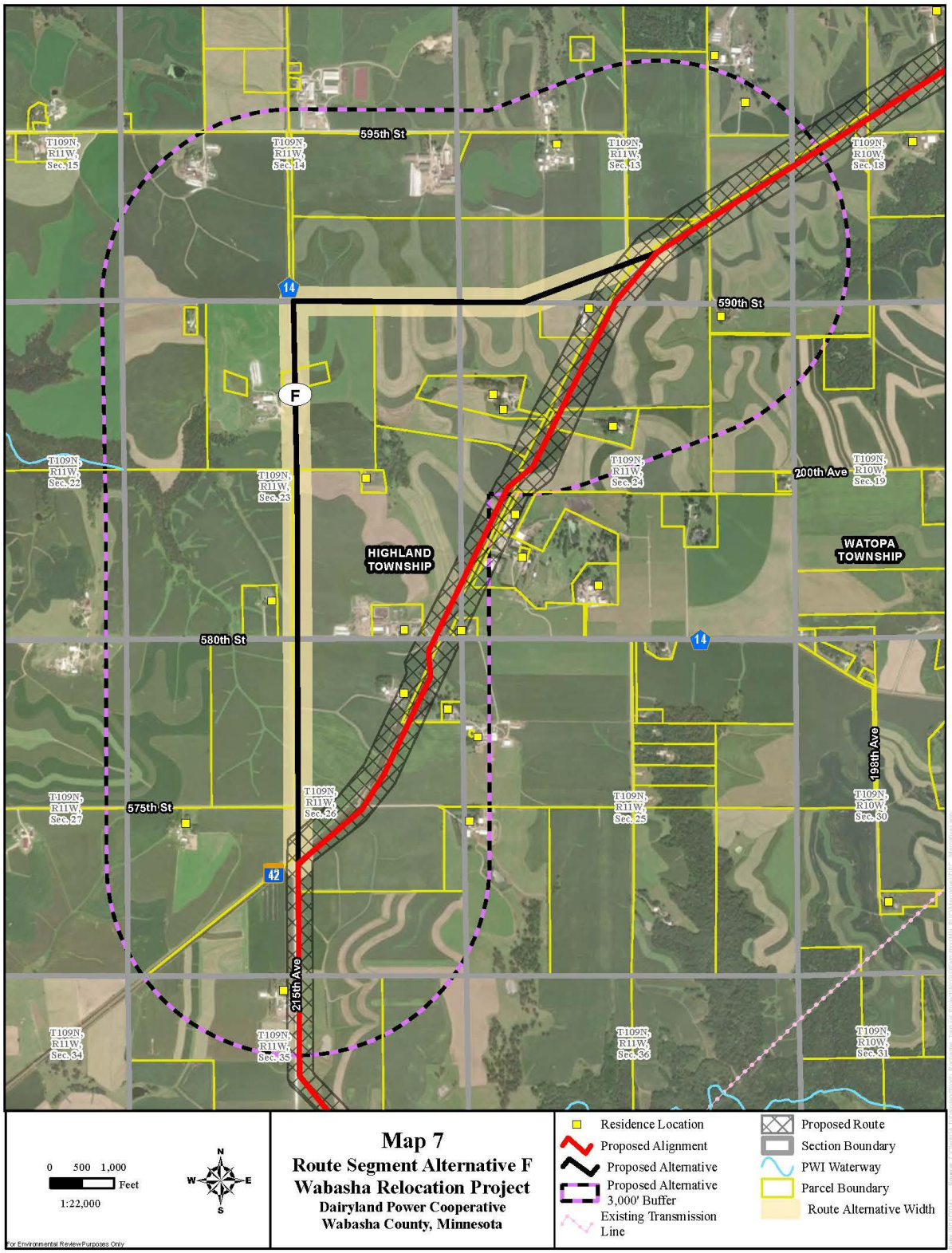
For Environmental Review Purposes Only
Map 6
Route Segment Alternative E
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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WATOPA TOWNSHIP
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T109N, R10W, Sec. 18
T109N, R11W, Sec. 22
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T109N, R11W, Sec. 24
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T109N, R11W, Sec. 26
T109N, R11W, Sec. 25
T109N, R10W, Sec. 30
T109N, R11W, Sec. 34
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T109N, R10W, Sec. 31
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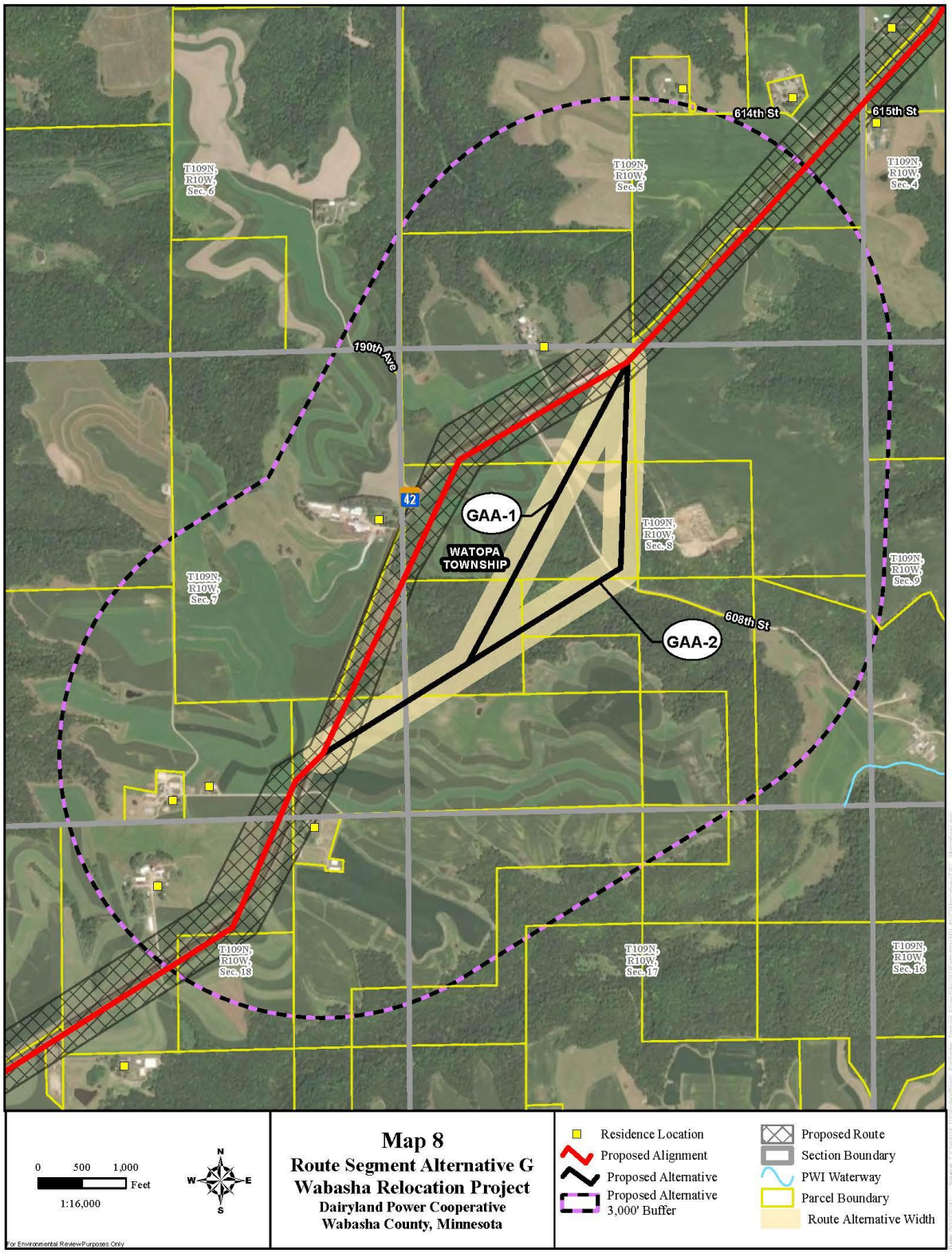
For Environmental Review Purposes Only
Map 7
Route Segment Alternative F
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Existing Transmission Line
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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42
GAA-1
WATOPA TOWNSHIP
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T109N, R10W, Sec. 7
T109N, R10W, Sec. 9
608th St
GAA-2
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T109N, R10W, Sec. 17
T109N, R10W, Sec. 16
0 500 1,000 Feet
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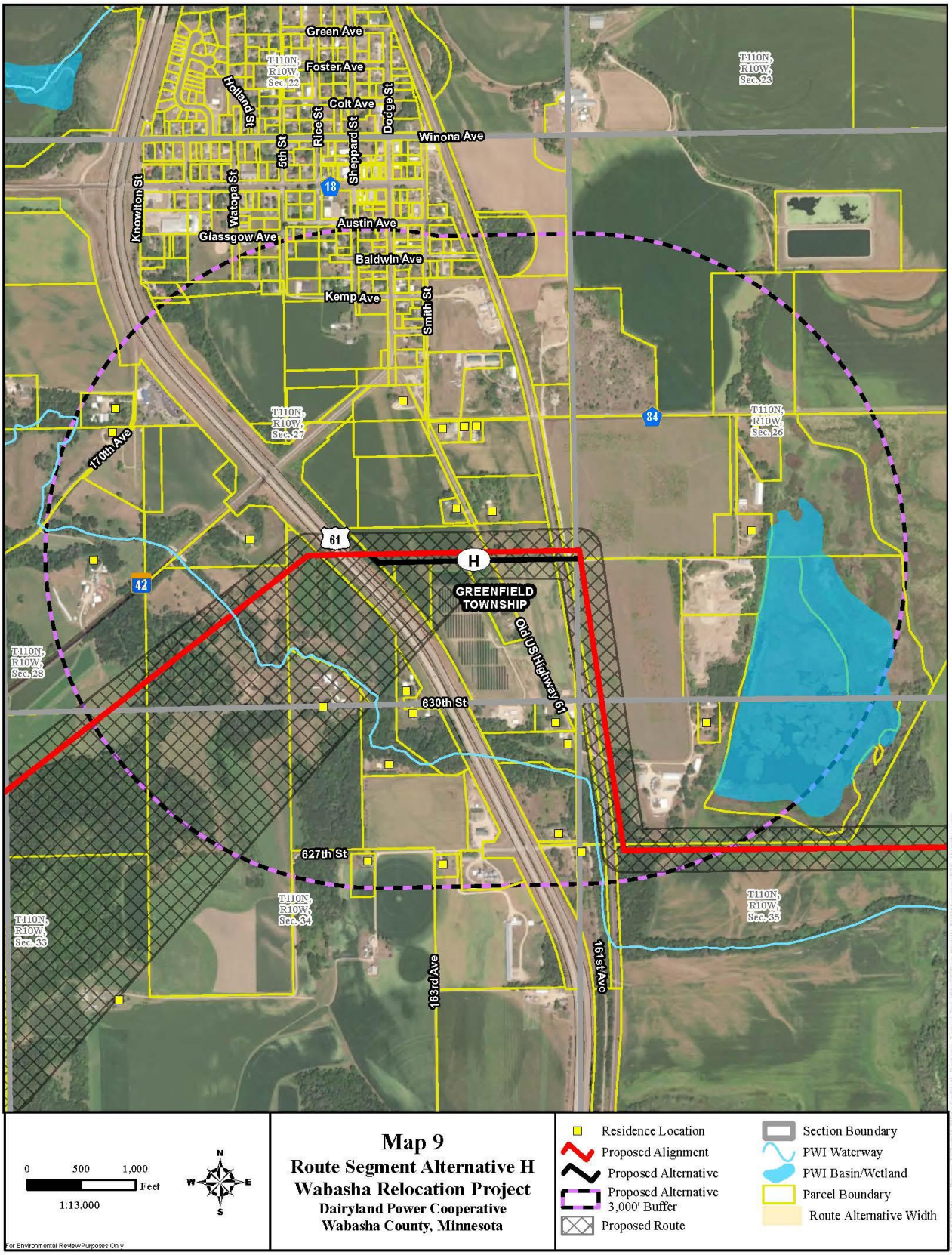
For Environmental Review Purposes Only
Map 8
Route Segment Alternative G
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Proposed Route
Section Boundary
PWI Waterway
Parcel Boundary
Route Alternative Width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Rice St
Sheppard St
Dodge St
Smith St
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T110N, R10W, Sec. 34
T110N, R10W, Sec. 35
T110N, R10W, Sec. 33
170th Ave
GREENFIELD TOWNSHIP
Old US Highway 61
630th St
627th St
163rd Ave
161st Ave
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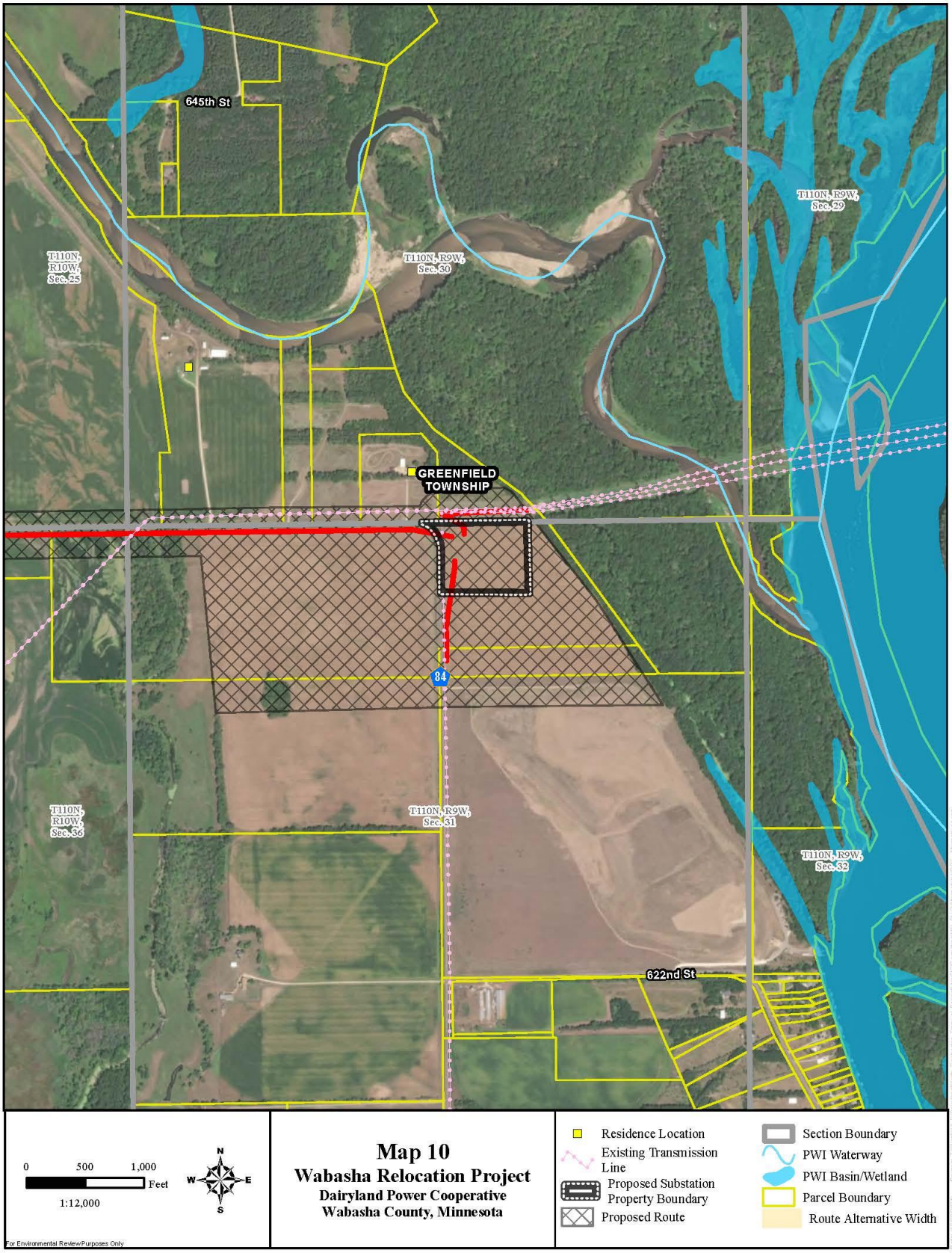
For Environmental Review Purposes Only
Map 9
Route Segment Alternative H
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Proposed Alignment
Proposed Alternative
Proposed Alternative 3,000' Buffer
Proposed Route
Section Boundary
PWI Waterway
PWI Basin/Wetland
Parcel Boundary
Route Alternative Width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For Environmental Review Purposes Only
Map 10
Wabasha Relocation Project
Dairyland Power Cooperative
Wabasha County, Minnesota
Residence Location
Existing Transmission Line
Proposed Substation Property Boundary
Proposed Route
Section Boundary
PWI Waterway
PWI Basin/Wetland
Parcel Boundary
Route Alternative Width

APPENDIX C. RECONNAISSANCE TRIP OVERVIEW PHOTOGRAPHS

technical memo

Project Name |	Wabasha 161 kV Relocation Project – Environmental Assessment EOR Project 01051-0007	**Date** |	10.30.24
To / Contact info |	Jim Sullivan, Project Manager, Department of Commerce, Energy Environmental Review and Analysis		
Cc / Contact info |	Nikki Wallenta, KLJ, Technical Lead		
From / Contact info |	Will Martin, CEP, RPA, Project Manager		
Regarding |	Summary of Reconnaissance		

On Friday, October 25, 2024, I undertook a reconnaissance of the Applicant's Proposed Route (APR) and seven Route Segment Alternatives (RSAs) – including all sub-segments – for the above referenced project. The goals of the of the reconnaissance were to: 1) identify any issues not identified in the Route Permit Application; 2) provide necessary context to team members to aid in the development of the alternative analysis and development of the Environmental Assessment; and 3) assess the routing factors with on-the-ground observations. The protocols used for this effort including driving the APR and RSAs to the fullest extent possible and examining the project area for issues that had some bearing on the most – but not all – Routing Factors that will be used to assess the project. The Region of Influence defined in the Environmental Assessment was used as a general guide. The route overview maps (**Appendix A**) included in Dairyland Electrical Cooperative's route permit application were used to reference the reconnaissance observations.

Because of a lack of public access, I was unable to access the area between Milepost (MP) 0.0 and 1.0, MP 7.9 and 9.5, and MP 10.7 and11.3 along the APR; the north/south leg of RSA-A; the east/west legs of RSA-B – RSA F, and all of RSA-G. The reconnaissance was limited to the public right-of-way along State Highway 42, U.S. Highway 61, and various county roads. I did not trespass onto any private property to complete this effort.

Overview and focused photographs are appended to the back of this document for reference, and a kmz depicting the location of Photo Points (PP) has been developed to assist with viewing the photographs. To the extent practicable, overview photographs were taken every 0.5 to 0.8 miles. Areas of special concern were also photographed. In general, photographs are presented from north to south and east to west along the APR and RSAs.

Human Settlement

Noise – There were no major source of noise noted, with the exception of traffic along State Highway 42.

Displacement – No homes or residences were noted within the project right-of-way. One business (Cowpokes) is at approximately Milepost 4.5 close to the project area. (**Photo 23**)

Public Services – No public offices or facilities were observed.

Transportation – The majority of the APR is parallel to State Highway 42, and the alignment crosses U.S. Highway 61 at MP 9.7 (**Photo 44**). The RSAs are adjacent to county-maintained roads and/or cut-cross country, connecting with the APR along State Highway 28. The APR crosses and parallels the Canadian Pacific Railroad around MP 10.5. (**Photos 50-53**).

Recreation – The only recreational within the immediate project area is a U.S. Army Corps of Engineers recreational area from approximately MP 12.0-13.0 (**Photo 58**).

Electric Interference – The APR parallels a local, two-phase distribution line along Highway 42 for most of its length. Major transmission lines occur along the southern ends of RSA A and RSA-B (**Photos 68 and 69**) and at the eastern end of the APR at the proposed Kellogg Substation (**Photos 59 and 63**). A solar-generating facility is located at MP 9.9 along the APR (**Photos 47-48**). A relay station or some other system is located at the southwest corner of State Highway 42 and 590th Street along the APR (**Photos 19-20**). A cell tower is at approximately MP 4.6 along the APR (**Photo 21**).

Potentially automated dairy operations with robotics were noted at MP 1.2, MP 2.2, MP 2.5, MP 2.9, MP 3.2, MP 4.8MP 5.9, and MP 6.3. No signage was noted that would indicate robotic operations.

All observed residences, farming/dairy operations, and commercial establishments proximal to the project area had at least one building(s) and structure(s) with metal roofing and/or cladding. Many had multiple metal sided and/or roofed buildings, and several properties were comprised entirely of metal buildings and structures.

Emergency Services – No first-responder facility was observed within the project area.

Zoning/Land Use – all alternatives are nestled in an agricultural matrix dominated by pastures and row-crop fields. The area along the bluffs on the west side of the valley is covered with a well-established stand of upland forest. Single-family residences and farming/diary operations dot the landscape. Two commercial establishments were noted close to the project area. The various photos give a sense of land use within the review area.

Aesthetics – The APR and RSAs are in a rural, rolling landscape dominated by agricultural operations and fields. The APR does cross over steep, rugged, forest-covered terrain along the western valley edge, which offers some dramatic contrasts (**Photos 39-46**).

Public Health and Safety

EMF/Electric Fields – The APR parallels a local, two-phase distribution line along Highway 42 for most of its length. Major transmission lines occur along the southern ends of RSA A and RSA-B (**Photos 68 and 69**) and at the eastern end of the APR at the proposed Kellogg Substation (**Photos 59 and 63**). A solar-generating facility is located at MP 9.9 along the APR (**Photos 47-48**). A relay station or some other system is located at the southwest corner of State Highway 42 and 590th Street along the APR (**Photos 19-20**). A cell tower is at approximately MP 4.6 along the APR (**Photo 21**). All observed residences, farming/dairy operations, and commercial establishments proximal to the project area had at least one building(s) and structure(s) with metal roofing and/or cladding.

Mapped transmission and distribution lines from the Route Permit Application are accurate and complete. No additional lines were observed.

Air Quality – No major source of air pollution was noted close to the APR and RSAs.

Safety – Most of the APR is adjacent to State Highway 42 and paved county roads, which could pose safety concerns during construction and maintenance as equipment access the selected route. The

RSAs are along graveled county roads or cut cross country, though some access would probably occur from primary and secondary roads.

Land-Based Economics

Forestry – No forestry operations or mills were observed in forested sections of the APR from MP 8.0-9.5. Potential harvestable wood exists in the sloped forested area above the river valley floor.

Agriculture – All alternatives cross over agricultural ground used in row-crop production, forage production, and pasture.

Tourism – The Zumbrowtha Trail crosses underneath the APR at roughly MP 19.7 along U.S. Highway 61 (**Photo 44**).

Mining – No active mining or quarrying operations were observed. A former quarry is located immediately north of the APR at MP 11.0 (**Photo 55**).

Archaeological and Historical Resources

A number of buildings and structure older than 50 years were noted along all alternatives. None appeared unique, representative of a specific school of design, or significant. Most have been extensively modified.

Natural Resources

Most of the APR and RSAs cross over agricultural ground adjacent to public right-of-way. Streams tended to be the upper reaches of first-order intermittent streams draining upland ridges. The Zumbrota River could not be accessed, nor the wooded slopes above the valley trench along the APR and RSA G.

No major source of air pollution was noted in the project area.

Because of droughty conditions, wetlands were difficult to define, but those that were identified were associated with farm ponds, with the exception being A farmed wetland complex (NWI) was noted in the area around MP 12.0-12.5 along the APR.

All depicted mapped on the Route Permit Application appear to be adequately mapped, though all were running dry due to droughty conditions.

No karst features were observed.

No bald eagle nests were observed, though a bald eagle was observed flying over the eastern leg of the APR and RSA-A.

Rare and Unique Natural Resources

Habitat for protected bat species was noted in the forested slopes above the valley floor and in isolated stands of mature oaks along the APR and RSA-G. Trees along most of the APR and the other RSAs were generally absent except for nuisance trees along fence lines and public right-of-way.

Use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.

The APR parrels the State Highway 42 right-of-way and private and utility rights-of-way from MP 0.7 to 7.9 MP to 10.0 to 10.6, and MP 11.5 to the eastern terminus at the Kellogg Substation. The APR traverses open country from MP 0.0 to 0.7, MP 7.9 to 10.0. These cross-country routes typically do not follow property lines. Existing utilities along State Highway 42 include buried cable and fiber lines on both sides of the roadway and a two-phase electrical distribution line.

Photo Point 1

Photo 1 – Overview of APR at Milepost (MP) 1.0 –view to the north

Photo 2 – Overview of APR at Milepost MP 1.0 –view to the southeast

Photo 3 – NWI Signature/Pond at MP 1.0 – view to the southeast.

Photo Point 2

Photo 4 – Overview of APR at MP 1.6 – view to the south.

Photo Point 3

Photo 5 – Overview of APR at MP 1.9 – view to the east

Photo 6 – Overview of APR at MP 1.9 – view to the west

Photo Point 4

Photo 7 – Dairy Operation north off Hwy 42 at MP 2.2 – view to the south

Photo 8 – Dairy Operation north off Hwy 42 at MP 2.2 – view to the northeast

Photo Point 5

Photo 9 – Overview of APR at MP 2.5 – view to the east

Photo 10 – Overview of APR at MP 2.5 – view to the west

Photo 11 – Overview of Large Dairy Operation at MP 2.6 at intersection of Hwy 42 and 580th Street

Photo Point 6

Photo 12 – Overview of APR at MP 2.9 – view to the east

Photo 13 – Overview of APR at MP 2.9 – view to the west

Photo 14 – Large Dair Operation on south-side of Hwy 42 at MP 2.9 – view to the south.

Photo Point 7

Photo 15 – Overview of APR at MP 3.6 – view to the east

Photo 16 – Overview of APR at MP 3.6 – view to the east

Photo Point 8

Photo 17 – Overview of APR at MP 4.0 – view to the east

Photo 18 – Overview of APR at MP 4.0 – view to the west

Photo 19 – Relay System at SW corner of Hwy 41 and 590th Street – view to the south

Photo 20 – NWI Signature at MP 4.9 – view to the southeast

Photo Point 9

Photo 21 – Overview of APR and Cell Tower at MP 4.5 – view to the east

Photo 22 – Overview of APR at MP 4.5 – view to the west

Photo 23 – Business at MP 4.5 – view to the southwest

Photo 24 – Large Dair Operation north of Hwy 42 at MP 4.5 – view to the north

Photo Point 10

Photo 25 – Overview of APR at MP 5.3 – view to the east

Photo 26 – Overview of APR at MP 5.3 – view to the west

Photo Point 11

Photo 27 – Overview of APR at MP 5.5 – view to the east

Photo 28 – Overview of APR at MP 5.5 – view to the west

Photo Point 12

Photo 29 – Overview of APR at MP 6.2 – view to the east

Photo 30 – Overview of APR at MP 6.2 – view to the west

Photo Point 13

Photo 31 – Overview of APR at MP 6.5 – view to the east

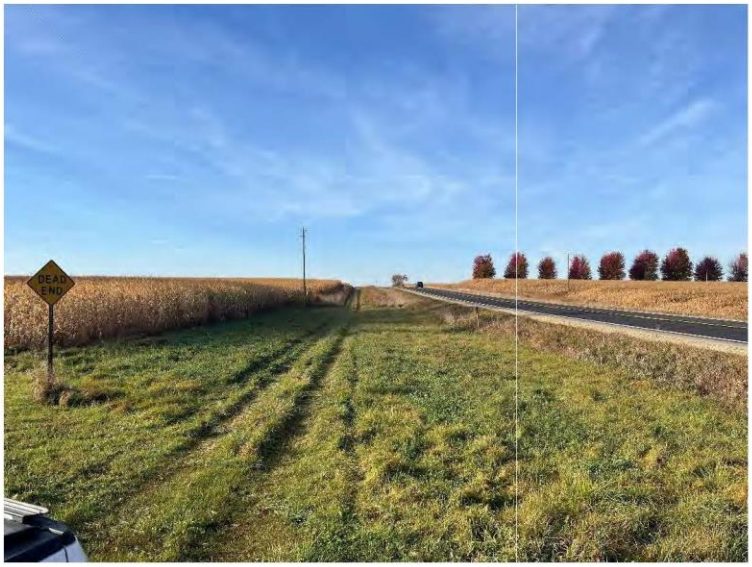


Photo 32 – Overview of APR at MP 6.5 – view to the west

Photo Point 14

Photo 33 – Overview of APR at 6.8 – view to the east

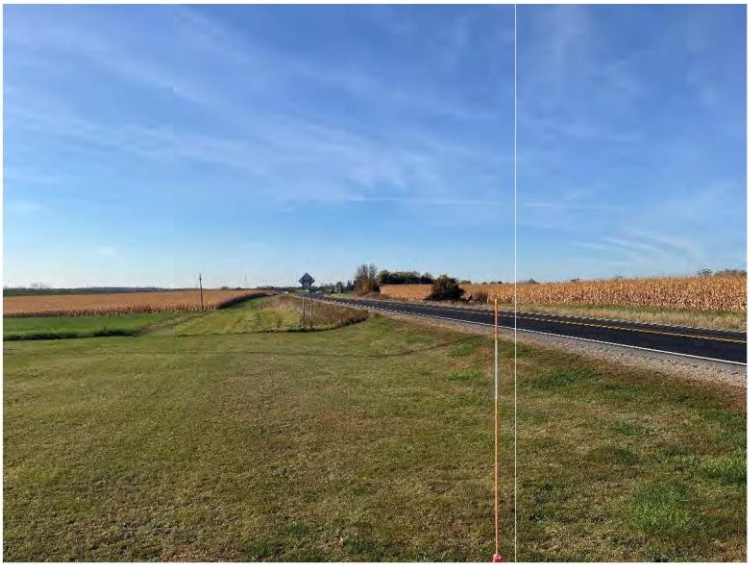


Photo 34 – Overview of APR at MP 6.8 – view to thw west

Photo Point 15

Photo 35 – Overview of APR at MP 7.7 – view to the east

Photo 36 – Overview of APR at MP 7.7 – view to the west

Photo 37 – Commercial Establishment at MP 7.8 – view to the northwest

Photo 38– Point Where APR Leaver Hway 42 Corridor – view to the east

Photo Point 16

Photo 39 – APR and RSA G Overview – view to the west (1 of 5)

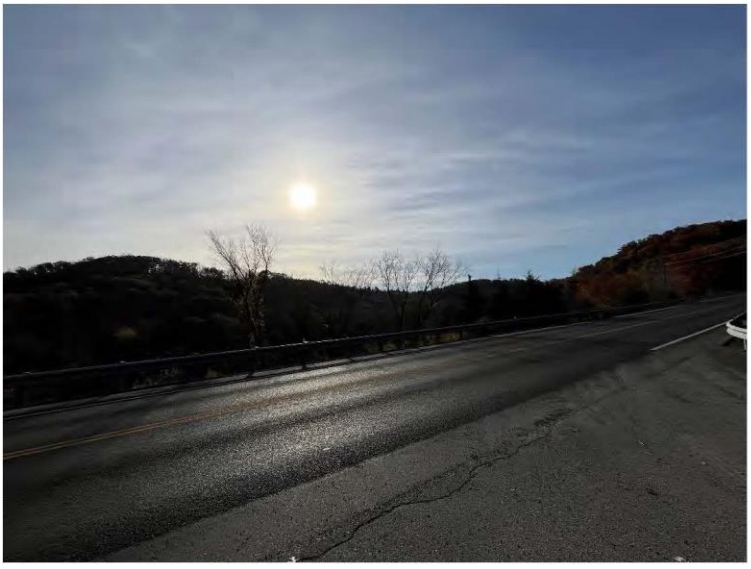


Photo 40 – APR and RSA G Overview – view to the south, southwest(2 of 5)

Photo 41 – APR and RSA G Overview – view to the south(3 of 5)

Photo 42 – APR and RSA G Overview – view to the southeast (4 of 5)

Photo 43 – APR and RSA G Overview – view to the east, sotheast (5 of 5)

Photo Point 17

Photo 44 – Hwy 42 Crossing – View to the south

Photo 45 – APR Entering Valley Floor Off of Bluffs – view to the west.

Photo 46 – APR – view to the east of Hwy 42

Photo Point 18

Photo 47 – Solar Facility east of Hwy 42 at630th Street – view to the north

Photo Point 19

Photo 48 – Overview of APR at MP 9.9 – view to the west

Photo 49 – Overview of APR at MP 9.9 – view to the east

Photo 50 – Shared Corridor with CP RR – view to the northeast

Photo Point 20

Photo 51 -- Shared Corridor with CP RR – view to the north

Photo 52 – Shared Corridor with CP RR – view to the south

Photo Point 21

Photo 53 – Shared Corridor with CP RR – view to the south

Photo Point 22

Photo 54 – Overview of APR at MP 11.5 – view to the east

Photo 55 – Overview of APR at MP 11.5 – view to the west

Photo Point 23

Photo56 – Overview of APR at MP 12.3 – view to the east

Photo 57 – Overview of APR at MP 12.3 – view to the west

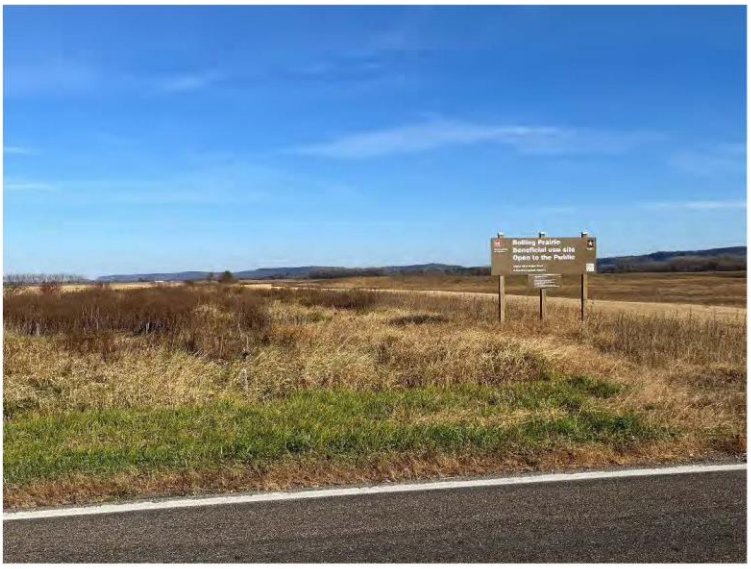


Photo 58 – Public Open Space – view to the north

Photo Point 24

Phot 59 – Overview of APR at MP 12.8 – view to the east

Photo 60 – Overview of APR at MP 12.8 – view to the west

Photo 61 – Overview of MBS Site at MP 12.8 – view to the south

Photo Point 25

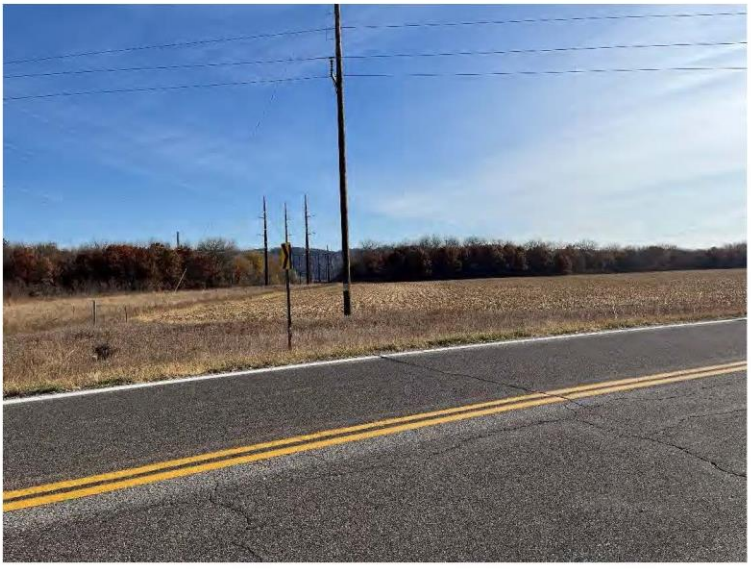


Photo 62 – Eastern Terminus of APR at Kellogg Substation – view to the east

Photo 63 – Eastern Terminus of APR – view to the west.

Photo Point 26

Photo 64 – Overview of RAS B-F along County Road 14 at Hwy 42 intersection – view to the North

Photo 65 – Large Dairy Operation on County Road 14 north of 580th Street – view to the north

Photo 66 – General Overview of east/west legs of RAS B-F – view to the south east

Photo Point 27

Photo 67 – RAS A along Hwy 42 – view to the east

Photo Point 28

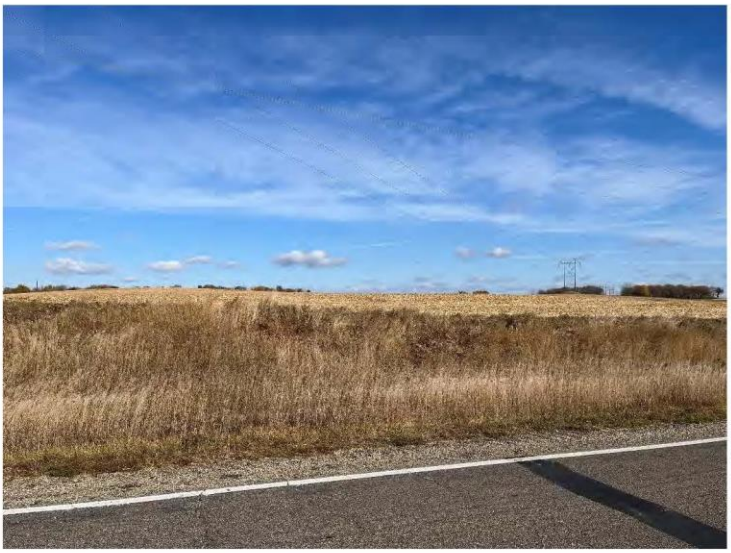
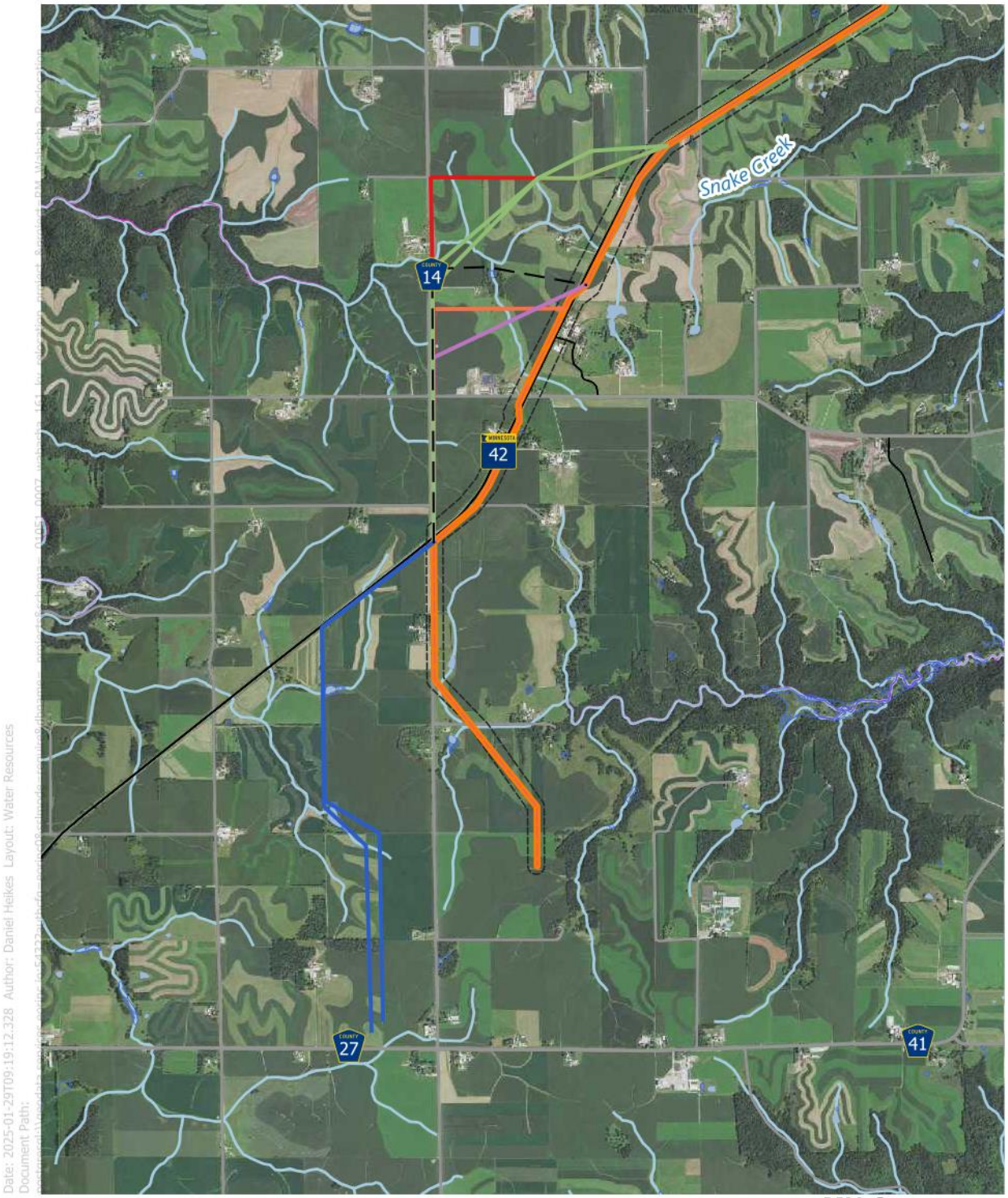


Photo 68 – Southern Terminus of RAS A – view to the north

Photo Point 29

Photo 69 – RAS A south of Hwy 42 – view to the south – CapEX structures in background

APPENDIX D. WETLANDS AND STREAMS



Statewide NWI
Freshwater Emergent Wetland
Freshwater Pond
Rivers and Streams

COMMERCE DEPARTMENT

MN Commerce Department
Wabasha 161 kV EA
Water Resources

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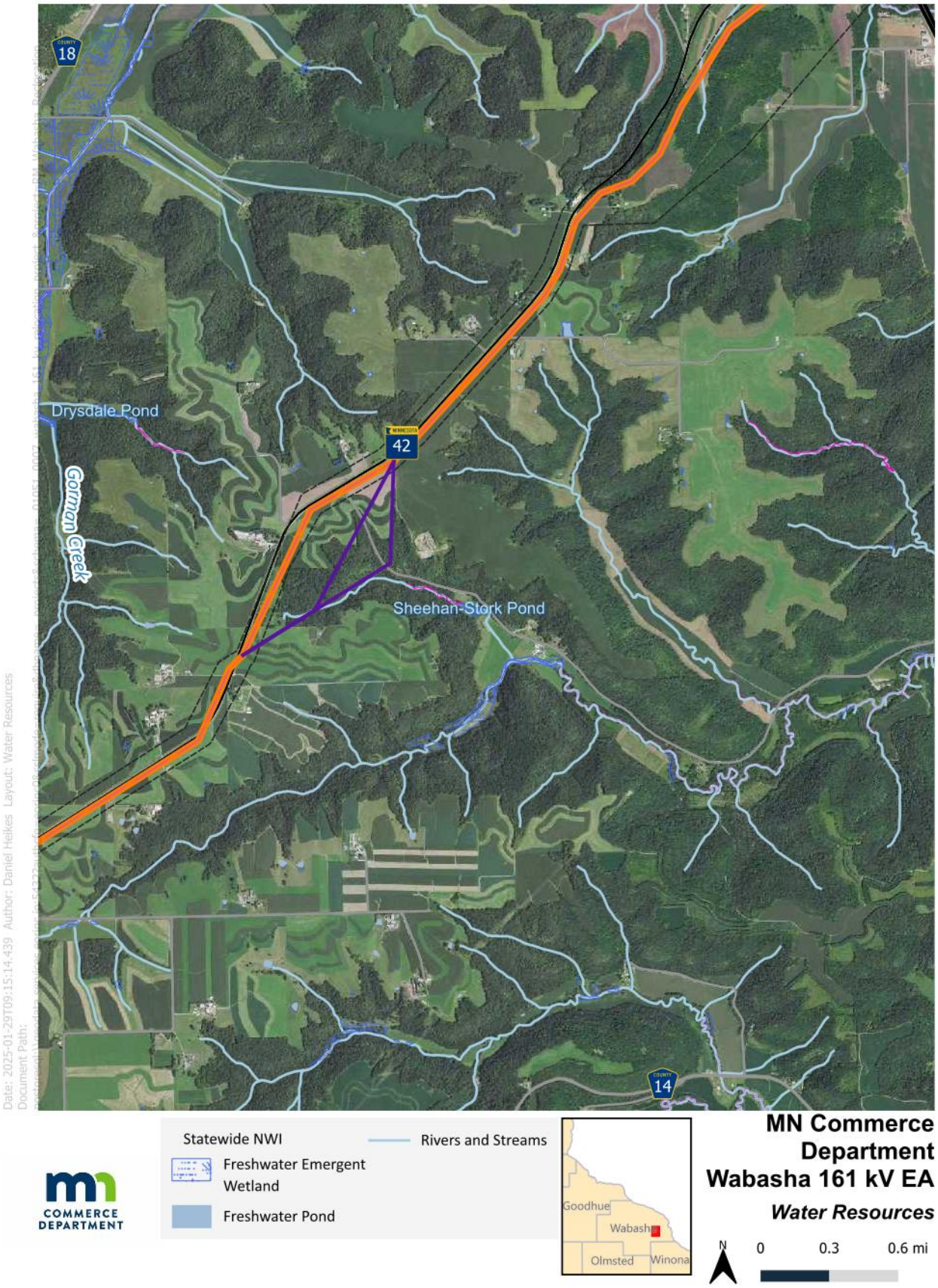
18
Drysdale Pond
42
Gorman Creek
Sheehan-Stork Pond
14
Statewide NWI
Freshwater Emergent Wetland
Freshwater Pond
Rivers and Streams
Goodhue
Wabasha
Olmsted
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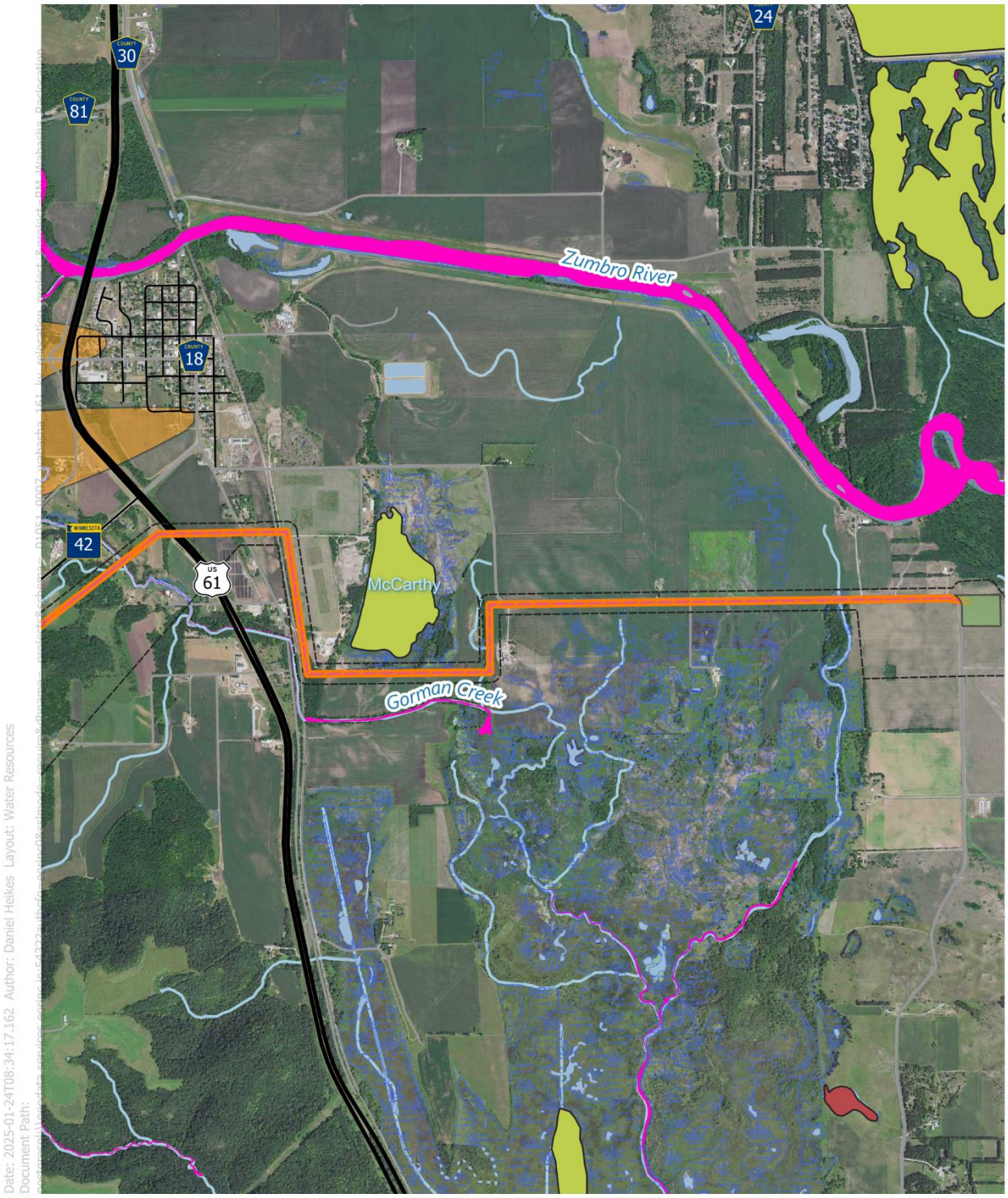

Date: 2025-01-24T08:34:17.162 Author: Daniel Heikes Layout: Water Resources
Document Path:

COMMERCE DEPARTMENT

Water Resources

- Shallow Lakes
- Wild Rice Lakes
- Freshwater Emergent Wetland
- Freshwater Pond
- Lake
- Rivers and Streams

MN Commerce Department
Wabasha 161 kV EA
Water Resources

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APPENDIX E. NATURAL HERITAGE REVIEWS

DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

April 2, 2024
Correspondence # MCE 2023-00935

Mandy Bohnenblust
Merjent, Inc

RE: Natural Heritage Review of the proposed **Dairyland Wabasha Relocation Project,** Wabasha County

Dear Mandy Bohnenblust,

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

Ecologically Significant Areas

- A calcareous fen (**McCarthy Lake**, ID# 31975) was documented in the vicinity of the proposed project. A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota. The Wetlands Conservation Act (WCA), authorized by Minnesota Statutes, section 103G.223, states that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by any activity, except as provided for in a management plan approved by the commissioner of the Department of Natural Resources. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away. For more information regarding calcareous fens, please see the Calcareous Fen Fact Sheet. To minimize stormwater impacts, please refer to the Minnesota Pollution Control Agency's General Principles for Erosion Prevention and Sediment Control in the Minnesota Stormwater Manual. Please note that calcareous fens are "Special Waters" and a buffer zone may be required.

Calcareous fens may be impacted by activities within the fen, activities that affect surface water flows (e.g., stormwater flow, erosion), or activities that affect groundwater hydrology (e.g., groundwater pumping, contamination, discharge, or excavation). **To ensure compliance under WCA, please contact the Calcareous Fen Program Coordinator, Keylor Andrews (Keylor.Andrews@state.mn.us).**

- The Minnesota Biological Survey (MBS) has identified **1** Site of *Outstanding*, **1** Sites of *High*, and **2** Sites of *Moderate* Biodiversity Significance in the vicinity of the proposed project. Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as *Outstanding* contain the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present in the state. Sites ranked as *High* contain very good quality occurrences of the rarest species, high quality examples of the rare native plant communities, and/or important functional landscapes. Sites ranked as *Moderate* contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery. **Please see your MCE-generated Conservation Planning Report for a comprehensive list of MBS Sites of Biodiversity Significance (attached).**

  This Site contains Silver Maple-Virginia Creeper Floodplain Forest (FFs68) native plant community directly adjacent to the proposed project. This community is considered **vulnerable to extirpation** (S3) within Minnesota. This floodplain forest contains swamp white oak (*Quercus bicolor*), a tree species of special concern.

  Given the ecological significance of these areas, we recommend that the project be designed to avoid impacts to the native plant communities by confining construction activities to the opposite side of the road. Actions to minimize disturbance may include, but are not limited to, the following recommendations:

  - As much as possible, operate within already-disturbed areas.
  - Retain a buffer between proposed activities and both MBS Sites and rare NPCs (S1-S3).
  - Confine construction activities to the opposite side of the road from MBS Sites and rare NPCs (S1-S3). If this is not feasible, confine construction activities to the existing road rights-of-way.
  - Minimize vehicular disturbance in the area (allow only vehicles necessary for the proposed work).
  - Do not park equipment or stockpile supplies in the area.
  - Do not place spoil within MBS Sites or other sensitive areas.
  - If possible, conduct the work under frozen ground conditions.

- Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of invasive species.
- Use effective erosion prevention and sediment control measures.
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible.
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern is birdsfoot trefoil (*Lotus corniculatus*) and crown vetch (*Coronilla varia*), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas, such as roadsides.

Construction in streambeds, lakes, and wetlands should be avoided whenever possible via spanning waterbodies. If spanning is not feasible, actions to minimize disturbance may include, but are not limited to, the following recommendations:

- Work in watercourses should be conducted during low flow whenever possible.
- If possible, conduct the work under frozen ground conditions.
- Wetland basins, lake beds, and stream/riverbeds should be restored to preconstruction contours. The work should not promote wetland drainage.
- Appropriate wildlife friendly erosion control measures, such as fabric, straw bales, mulch, and silt fences should be used to prevent sedimentation of adjacent wetlands, lakes, or watercourses.
- Impacts to existing vegetation should be kept to a minimum. Disturbed soil areas should be reseeded with native species suitable to the local habitat immediately upon project completion.

The Minnesota Biological Survey (MBS) considered the area surrounding the proposed project for a Site of Biodiversity Significance. **Snake Creek Bluffs North** was determined to be *Below* the minimum biodiversity threshold for statewide significance. This area, however, may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. **As such, indirect impacts from surface runoff or the spread of invasive species should be considered during project design and implementation.**

MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be viewed using the Explore page in Minnesota Conservation Explorer or their GIS shapefiles can be downloaded from the MN Geospatial Commons. Please contact the NH Review Team if you need assistance accessing the data. Reference the MBS Site Biodiversity Significance and Native Plant Community websites for information on interpreting the data. To receive a list of MBS Sites of Biodiversity Significance and DNR Native Plant Communities in the vicinity of your project, create a Conservation Planning Report using the Explore Tab in Minnesota Conservation Explorer. **I have attached a Conservation Planning Report to this review.**

- If the Wetland Conservation Act (WCA) is applicable to this project, please note that wetlands within rare (S1-S3) Native Plant Communities (NPC) may qualify as "Rare Natural Communities" under this Act. Minnesota Rules, part 8420.0515, subpart 3 states that a wetland replacement plan for activities that modify a rare natural community must be denied if the local government unit determines the proposed activities will permanently adversely affect the natural community. If the proposed project includes a wetland replacement plan under WCA, please contact your DNR Regional Ecologist for further evaluation. For technical guidance on Rare Natural Communities, please visit WCA Program Guidance and Information.

State-listed Species

- Blanding's turtles (*Emydoidea blandingii)* and wood turtles (*Glyptemys insculpta*), both state-listed threatened species, have been documented in the vicinity of the proposed project and may be encountered on site. Both species are semi-aquatic, spending time both on land and in water. Any added fatality can be detrimental to these populations of turtles, as these turtles have a low reproduction rate that depends upon a high survival rate to maintain population levels.

  This project has the potential to impact these rare turtles through direct fatalities and habitat disturbance/destruction due to excavation, fill, and other construction activities associated with the project. Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. As such, **the following avoidance measures are required**:

  - Avoid wetland and aquatic impacts during hibernation season, between September 15th and April 15th, if the area is suitable for hibernation.
  - Erosion and sediment control should be limited to wildlife friendly erosion control to avoid the inadvertent take of Blanding's turtles.
  - Hydro-mulch products should not contain any materials with synthetic (plastic) fiber additives, as the fibers can re-suspend and flow into waterbodies.
  - Construction areas, especially aquatic or wetland areas, should be thoroughly checked for turtles before the use of heavy equipment or any ground disturbance.
  - Check any holes that have been left unattended for prolonged periods for turtles before being filled.
  - The Blanding's turtle flyer must be given to all contractors working in the area. Illegal collection is a concern with wood turtles; therefore, please do not post any signs that would bring attention to the presence of wood turtles.
  - Monitor for turtles during construction. Report any sightings to Reports.NHIS@state.mn.us; please include date, observer, location, and photograph of the turtle.

- If turtles are in imminent danger, they must be moved by hand out of harm's way, otherwise they are to be left undisturbed. Please see Helping Turtles Across the Road for guidelines on how to move turtles safely out of danger.
- Please contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

For additional information, see the Blanding's turtle fact sheet, which describes the habitat use and life history of Blanding's turtle. The fact sheet also provides two lists of recommendations for avoiding and minimizing impacts to turtles. **Please refer to both lists of recommendations and apply those that are relevant to your project.**

- Timber rattlesnake (*Crotalus horridus)*, a state-listed threatened species, have been reported from the vicinity of the proposed project and may be encountered on site. In Minnesota, the ideal habitat for this species is forested bluffs, south-facing rock outcrops, and bluff prairies, particularly in the Mississippi River Valley. Nearby forests, prairies, and agricultural lands are used as summer feeding grounds. Two necessary habitat components are open areas for thermoregulation, and dens for overwintering. The dens are often located on steep, south- or west-facing hillsides with rock outcroppings and ledges. Timber rattlesnakes emerge from their dens in late April to early May and return to them in late September to early October. In the spring and fall, timber rattlesnakes are active during the day; while during the hottest months of summer, they are mostly active at night. Additionally, gophersnake (*Pituophis catenifer*), North American racer (*Coluber constrictor*), and plains hog-nosed snake (*Heterodon nasicus*), all species of special concern, have been documented in the vicinity of the proposed project.

  Timber rattlesnake mortality in Minnesota is most commonly caused by poaching, vehicle collisions, and habitat destruction. The loss of a single adult, especially a female, can impact the population significantly. Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. As such the following avoidance measures are **required**:

  - **Crews working in the area should be advised that if they encounter any snakes, the snakes should not be disturbed.**
  - **Erosion and sediment control should be limited to wildlife friendly erosion control to avoid the inadvertent take of timber rattlesnakes.**
  - Please contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

  Timber rattlesnake precautions may include, but are not limited to, the following recommendations:

  - Wear appropriate personal protection equipment, such as thick pants, boots, and leather gloves.

- Care should be taken around stockpiled materials as snakes may be using these materials as shelter.
- Report any sightings to Reports.NHIS@state.mn.us; please include date, observer, location, and photograph of the timber rattlesnake.

- Seaside three-awn (*Aristida tuberculosa*), clasping milkweed (*Asclepias amplexicaulis*), beach heather (*Hudsonia tomentosa*), and Davis' sedge (*Carex davisii*), all state-listed threatened plants, have been documented in the project vicinity. Habitat for seaside three-awn, clasping milkweed, and beach Heather include savanna and upland prairie. Habitat for Davis' sedge includes floodplain forest. **All potential habitats must be avoided.** If this is not feasible, a qualified surveyor will need to determine if suitable habitat exists within the activity impact area and, if so, conduct a survey prior to any project activities. Take of state-listed threatened and endangered plant species is exempt only within previously disturbed road rights-of-ways (ROW).

  Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. Surveys must be conducted by a qualified surveyor and follow the standards contained in the Rare Species Survey Process and Rare Plant Guidance. Survey results should be sent to Reports.NHIS@state.mn.us with subject line MCE-2023-00935. Visit the Natural Heritage Review page for a list of certified surveyors and more information on this process. Project planning should take into account that any botanical survey needs to be conducted during the appropriate time of the year, which may be limited. Please contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

- Many rare aquatic species, including state-listed endangered and threatened species, have been documented in the Mississippi River in the vicinity of the proposed project. These species are vulnerable to deterioration in water quality, particularly increased siltation. **Therefore, it is important that stringent erosion prevention and sediment control practices are maintained throughout the duration of the project to prevent adverse debris and material from entering the Mississippi River, Zumbro River, and the adjacent floodplain forest.**

- Bell's vireo (*Vireo bellii*) and lark sparrow (*Chondestes grammacus*), state-listed bird species of special concern, have been documented in the vicinity of the project. **If feasible, avoid initial disturbance to grassland areas and tree/shrub removal from May 15th through August 15th to avoid disturbance of nesting birds.**

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all seven of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season

(approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- The area of interest overlaps with a U.S Fish and Wildlife Service (USFWS) Rusty Patched Bumble Bee High Potential Zone. The rusty patched bumble bee *(Bombus affinis)* is federally listed as endangered and is likely to be present in suitable habitat within High Potential Zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. If applicable, **the DNR recommends reseeding disturbed soils with native species of grasses and forbs using** BWSR Seed Mixes **or** MnDOT Seed Mixes**.**

  To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online Information for Planning and Consultation (IPaC) tool. Please note that all projects, regardless of whether there is a federal nexus, are subject to federal take prohibitions. The IPaC review will determine if prohibited take is likely to occur and, if not, will generate an automated letter. The USFWS RPBB guidance provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix.

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant

species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.**

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the Natural Heritage Review website for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Molly Barrett

Molly Barrett
Natural Heritage Review Specialist
Molly.Barrett@state.mn.us

Cc: Melissa Collins, Regional Environmental Assessment Ecologist, Region 3 (Central)
Cc: Amanda Weise, Regional Ecologist, Region 3 (Central)
Cc: Keylor Andrews, Calcareous Fen Program Coordinator
Cc: Jennie Skancke, Wetlands Program Coordinator
Cc: Cynthia Warzecha, Energy Projects Review

DEPARTMENT OF NATURAL RESOURCES

Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

Project Name: Wabasha 161 kV Transmission Line Environmental Assessment

Project Proposer: Dairyland Power Cooperative

Project Type: Utilities, Transmission (electric, cable, phone)

Project Type Activities: Tree Removal;Waterbody or watercourse impacts (e.g., dewatering, discharge, excavation, fill, runoff, sedimentation, changes in hydrology));Wetland impacts (e.g., dewatering, tiling, drainage, discharge, excavation, fill, runoff, sedimentation, changes in hydrology)

TRS: T108 R11 S2, T109 R10 S5, T109 R10 S7, T109 R10 S8, T109 R11 S13, T109 R11 S14, T109 R11 S23, T109 R11 S24, T109 R11 S26, T109 R11 S34, T109 R11 S35

County(s): Wabasha

DNR Admin Region(s): Central

Reason Requested: Other

Project Description: The Project is a reroute of approximately 10.4 miles of the existing Dairyland LQ34 161-kV transmission line which is presently located on the existing ...

Existing Land Uses: The review area is in a largely agricultural matrix on an upland divide separating the Whitewater River Basin to the east and south and the Lone and Dry ...

Landcover / Habitat Impacted: The review area is a largely open landscape covered with annual commodity crops and pastures used for forage production and grazing, with narrow tree-lined ...

Waterbodies Affected: Seven unnamed intermittent tributaries of West Indian Creek and three unnamed intermittent tributaries of Snake Creek. Unknown wetland presence pending ...

Groundwater Resources Affected: Groundwater infiltration and contamination is not anticipated.

Previous Natural Heritage Review: Yes, ERDB#: 2023-00935

Previous Habitat Assessments / Surveys: No

SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	Comments	Tree Removal - Recommendations
Ecologically Significant Area	Comments	MBS Sites - Recommendations Local Conservation Value - Comment Potential RNC - Will Require Consultation Protected Wetlands: Calcareous Fens
State-Listed Endangered or Threatened Species	Needs Further Review	State-protected Species in Vicinity

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Category	Results	Response By Category
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review

10/17/2024 03:54 PM

DEPARTMENT OF NATURAL RESOURCES

October 17, 2024

Project Name: Wabasha 161 kV Transmission Line Environmental Assessment
Project Proposer: Dairyland Power Cooperative
Project Type: Utilities, Transmission (electric, cable, phone)
Project ID: MCE #2024-00881

AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED
As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

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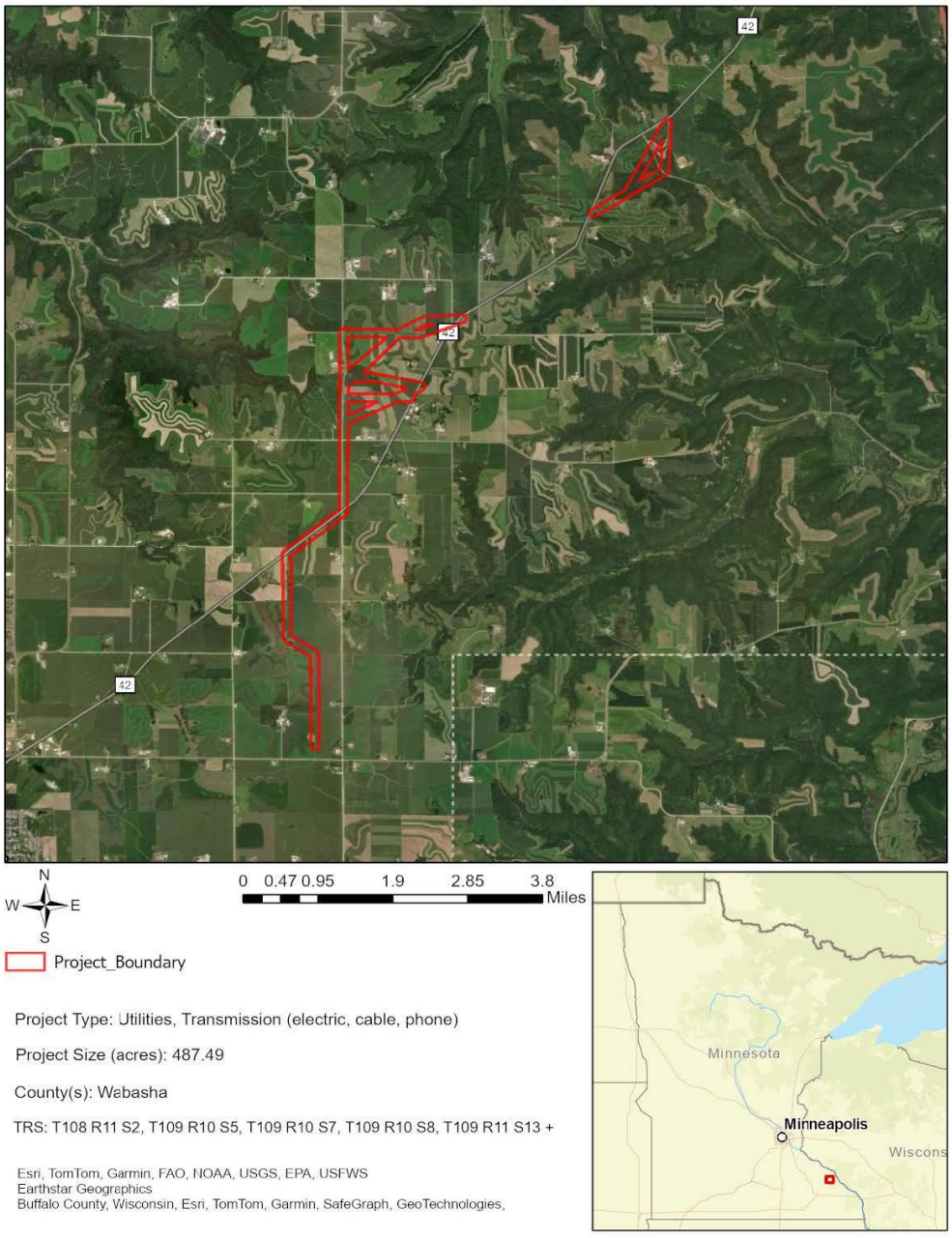
abasha 161 kV Transmission Line Environmental Assessm

Aerial Imagery With Locator Map



Project Type: Utilities, Transmission (electric, cable, phone)

Project Size (acres): 487.49

County(s): Wabasha

TRS: T108 R11 S2, T109 R10 S5, T109 R10 S7, T109 R10 S8, T109 R11 S13 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Earthstar Geographics
Buffalo County, Wisconsin, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies,

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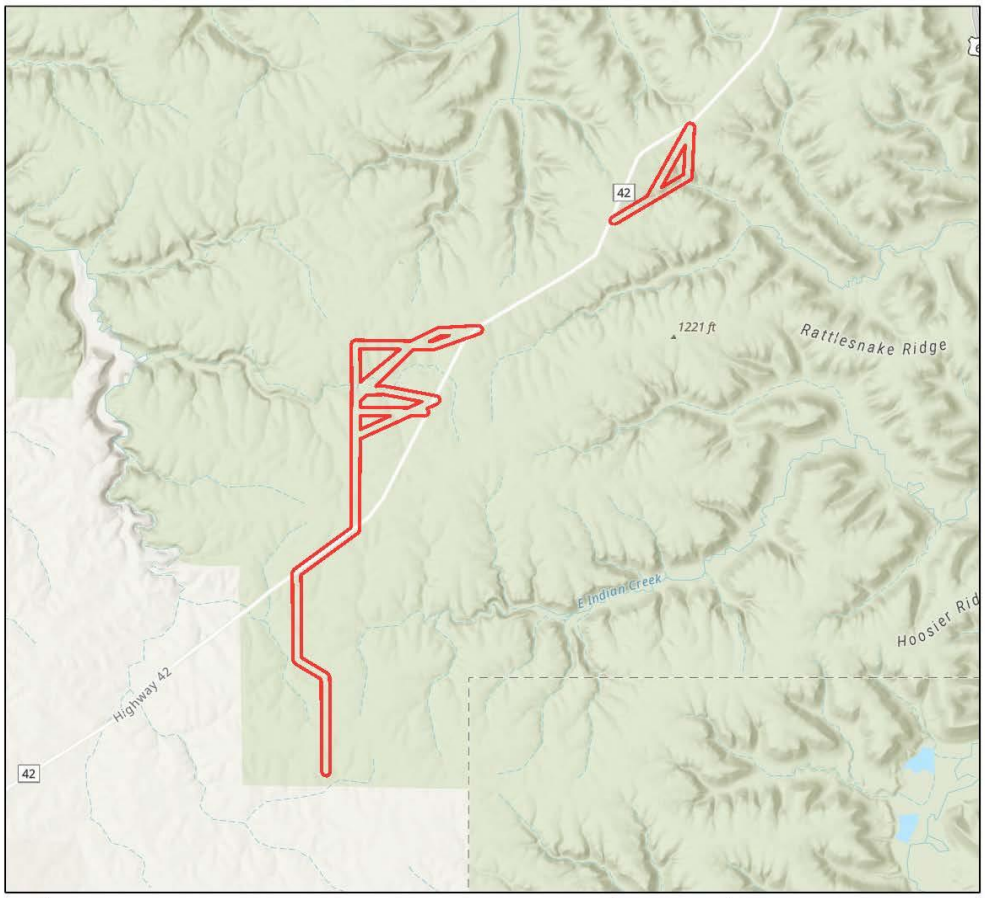
abasha 161 kV Transmission Line Environmental Assessm

USA Topo Basemap With Locator Map



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Miles

Project_Boundary

Project Type: Utilities, Transmission (electric, cable, phone)

Project Size (acres): 487.49

County(s): Wabasha

TRS: T108 R11 S2, T109 R10 S5, T109 R10 S7, T109 R10 S8, T109 R11 S13 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Esri, NASA, NGA, USGS
Buffalo County, Wisconsin, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies,

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DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

December 16, 2024

Jimmy Marty
Emmons & Olivier Resources, Inc.

RE: Natural Heritage Review of the proposed **Wabasha 161 kV Transmission Line Environmental Assessment**,

County	Township	Range	Section
Wabasha	108N	11W	2
Wabasha	109N	10W	5, 7, 8
Wabasha	109N	11W	13, 14, 23, 24, 26,34, 35

Dear Jimmy Marty,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2024-00881** in the email subject line.

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

Ecologically Significant Areas

- A calcareous fen (**McCarthy Lake**, ID# 31975) was documented in the vicinity of the proposed project. A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota. The Wetlands Conservation Act (WCA), authorized by Minnesota Statutes, section 103G.223, states that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by any activity, except as provided for in a management plan approved by the commissioner of the Department of Natural Resources. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away. For more information regarding calcareous fens, please see the Calcareous Fen Fact Sheet. To minimize stormwater impacts, please refer to the Minnesota Pollution Control Agency's General Principles for Erosion Prevention and Sediment Control in the Minnesota Stormwater Manual. Please note that calcareous fens are "Special Waters" and a buffer zone may be required.

Calcareous fens may be impacted by activities within the fen, activities that affect surface water flows (e.g., stormwater flow, erosion), or activities that affect groundwater hydrology (e.g., groundwater pumping, contamination, discharge, or excavation). **To ensure compliance under WCA, please contact the Calcareous Fen Program Coordinator, Keylor Andrews (Keylor.Andrews@state.mn.us).**

- The Minnesota Biological Survey (MBS) has identified **Snake Creek Bluffs South** as a Site of *Moderate* Biodiversity Significance (MBS Site) in the vicinity of the proposed project. MBS Sites have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. MBS Sites ranked as *Moderate* contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery. This MBS Site contains **Red Oak - White Oak Forest** (MHs37a) native plant community directly adjacent to the proposed project. This community is considered **vulnerable to extirpation** (S3) within Minnesota.

  Given the ecological significance of these areas, we recommend that the project be designed to avoid impacts to the native plant communities by confining construction activities to the opposite side of the road. Actions to minimize disturbance may include, but are not limited to, the following recommendations:

  - As much as possible, operate within already-disturbed areas.
  - Retain a buffer between proposed activities and both MBS Sites and rare NPCs (S1-S3).
  - Confine construction activities to the opposite side of the road from MBS Sites and rare NPCs (S1-S3). If this is not feasible, confine construction activities to the existing road rights-of-way.
  - Minimize vehicular disturbance in the area (allow only vehicles necessary for the proposed work).
  - Do not park equipment or stockpile supplies in the area.
  - Do not place spoil within MBS Sites or other sensitive areas.
  - If possible, conduct the work under frozen ground conditions.
  - Inspect and clean equipment prior to operating and follow recommendations to prevent the spread of invasive species.
  - Use effective erosion prevention and sediment control measures.
  - Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible.
  - Use only weed-free mulches, topsoils, and seed mixes. Of particular concern is birdsfoot trefoil (*Lotus corniculatus*) and crown vetch (*Coronilla varia*), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas, such as roadsides.

  Construction in streambeds, lakes, and wetlands should be avoided whenever possible via spanning waterbodies. If spanning is not feasible, actions to minimize disturbance may include, but are not limited to, the following recommendations:

  - Work in watercourses should be conducted during low flow whenever possible.
  - If possible, conduct the work under frozen ground conditions.
  - Wetland basins, lake beds, and stream/riverbeds should be restored to preconstruction contours. The work should not promote wetland drainage.
  - Appropriate wildlife friendly erosion control measures, such as fabric, straw bales, mulch, and silt fences should be used to prevent sedimentation of adjacent wetlands, lakes, or watercourses.

- Impacts to existing vegetation should be kept to a minimum. Disturbed soil areas should be reseeded with native species suitable to the local habitat immediately upon project completion.

The Minnesota Biological Survey (MBS) considered the area surrounding the proposed project for a Site of Biodiversity Significance. **Snake Creek Bluffs North** was determined to be *Below* the minimum biodiversity threshold for statewide significance. This area, however, may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. **As such, indirect impacts from surface runoff or the spread of invasive species should be considered during project design and implementation.**

MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be viewed using the Explore page in Minnesota Conservation Explorer or their GIS shapefiles can be downloaded from the MN Geospatial Commons. Please contact the NH Review Team if you need assistance accessing the data. Reference the MBS Site Biodiversity Significance and Native Plant Community websites for information on interpreting the data. To receive a list of ecologically significant areas in the vicinity of your project, create a Conservation Planning Report using the Explore page in MCE.

- If the Wetland Conservation Act (WCA) is applicable to this project, please note that native plant communities with a Conservation Status Rank of S1 through S3 or wetlands within *High* or *Outstanding* MBS Sites of Biodiversity Significance may qualify as Rare Natural Communities (RNC) under WCA. Minnesota Rules, part 8420.0515, subpart 3 states that a wetland replacement plan for activities that modify a RNC must be denied if the local government unit determines the proposed activities will permanently adversely affect the RNC. If the proposed project includes a wetland replacement plan under WCA, please contact your DNR Regional Ecologist for further evaluation. Please visit WCA Program Guidance and Information for additional information, including the RNC Technical Guidance.

State-listed Species

- Timber rattlesnake (*Crotalus horridus)*, a state-listed threatened species, have been reported from the vicinity of the proposed project and may be encountered on site. In Minnesota, the ideal habitat for this species is forested bluffs, south-facing rock outcrops, and bluff prairies, particularly in the Mississippi River Valley. Nearby forests, prairies, and agricultural lands are used as summer feeding grounds. Two necessary habitat components are open areas for thermoregulation, and dens for overwintering. The dens are often located on steep, south- or west-facing hillsides with rock outcroppings and ledges. Timber rattlesnakes emerge from their dens in late April to early May and return to them in late September to early October. In the spring and fall, timber rattlesnakes are active during the day; while during the hottest months of summer, they are mostly active at night. Additionally, North American racer (*Coluber constrictor*), a species of special concern, has been documented in the vicinity of the proposed project.

  Timber rattlesnake mortality in Minnesota is most commonly caused by poaching, vehicle collisions, and habitat destruction. The loss of a single adult, especially a female, can impact the population significantly. Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of

threatened or endangered species without a permit. As such the following avoidance measures are **required**:

- Advise crews working in the area that if they encounter any snakes, the snakes must not be disturbed.
- Limit erosion and sediment control to wildlife friendly erosion control to avoid the inadvertent take of timber rattlesnakes.
- Report any sightings using the Quick Species Observation Form.

Additional timber rattlesnake precautions may include, but are not limited to, the following recommendations:

- Wear appropriate personal protection equipment, such as thick pants, boots, and leather gloves.
- Care should be taken around stockpiled materials and existing riprap as snakes may be using these materials as shelter.

Please contact Review.NHIS@state.mn.us to confirm that the above required avoidance measures will be implemented or to inform us that they are not feasible. If the measures are not feasible, a project-specific avoidance plan will likely be needed.

- Kentucky coffee tree (*Gymnocladus dioicus*), a state-listed species of special concern, has been documented in the vicinity of the proposed project. Kentucky coffee tree is found most often in mesic hardwood forests on terraces of the Mississippi River in the Eastern Broadleaf Forest Province, and a few major tributaries. These are raised terraces, well above the reach of normal flood events. **We recommend surveying for these trees and avoiding them when feasible.**

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) tool.

Environmental Review and Permitting

- We understand that the planning for this project was not finalized when this Natural Heritage Review was conducted. Given the presence of rare ecologically significant areas and state-protected species with the current route, further Natural Heritage Review will be needed for alternate routes and/or the finalized route. Resubmission will ensure compliance with state statute and rules. Please reference the original project (2023-00935) and this project (2024-00881) when submitting alternate routes and/or the finalized route for future Natural Heritage Review.

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available and is the most complete source of data on Minnesota's native plant communities, rare species, and other rare features. However, the NHIS is not an exhaustive inventory and does not contain the locations of all rare features in the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.**

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit Natural Heritage Review for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, please contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Molly Barrett Digitally signed by Molly Barrett
Date: 2024.12.16 12:30:51 -06'00'

Natural Heritage Review Specialist
molly.barrett@state.mn.us

Cc: Melissa Collins, Regional Environmental Assessment Ecologist, Central (Region 3)
Cc: Amanda Weise, Regional Ecologist, Central (Region 3)
Cc: Jennie Skancke, Wetlands Program Coordinator
Cc: Keylor Andrews, Calcareous Fen Program Coordinator
Cc: Samantha Bump, Energy Review Planner

APPENDIX F. DRAFT ROUTE PERMIT

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

ROUTE PERMIT FOR
WABASHA 161 KV TRANSMISSION LINE RELOCATION

A HIGH-VOLTAGE TRANSMISSION LINE AND ASSOCIATED FACILITIES

IN
WABASHA COUNTY

ISSUED TO

PUC DOCKET NOS. ET3/CN-23-504 AND ET3/TL23-388

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

DAIRYLAND POWER COOPERATIVE

Dairyland Power Cooperative is authorized by this route permit to construct and operate a 161 kV high voltage transmission line and substation authorized by the Minnesota Public Utilities Commission.

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

Approved and adopted this ____ day of [Month, Year]

BY ORDER OF THE COMMISSION

_____
Will Seuffert,
Executive Secretary

Contents

ATTACHMENTS

1 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this route permit to Dairyland Power Cooperative (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This route permit authorizes the Permittee to construct and operate an 161-kV high voltage transmission line and substation to reroute approximately 10.4 miles of the existing Dairyland LQ34 161-kV transmission line, which is presently located on the existing CapX2020 Hampton-Rochester-LaCrosse 345-kV structures, and as identified in the attached route maps, hereby incorporated into this document ([Wabasha 161 kV Transmission Line Relocation], henceforth known as Transmission Facility).

1.1 Pre-emption

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

2 TRANSMISSION FACILITY DESCRIPTION

The Project would involve installation of 70- to 110-foot-high steel monopoles placed 400 to 800 feet apart within a 100-foot-wide right-of-way and construction of a new 4.0-acre substation located on a 10.8 acre site off of County Road 84, southeast of Kellogg.

The Transmission Facility is located in the following:

County	Township Name	Township	Range	Section
Wabasha	Plainview	108 North	11 West	1 and 2
	Watopa	109 North	10 West	4, 5, 7, 8, and 18
	Highland	109 North	11 West	13, 23-26, 34, and 35
	Greenfield	110 North	10 West	25-27, 30, 31, and 33-36

2.1 Structures

The majority of the new 161-kV transmission line will consist of single circuit steel structures spaced approximately 300 to 1,000 feet apart. Transmission structures will typically range in height from 75 to 140 feet above ground, depending upon the terrain and environmental constraints. The average diameter of the steel structures at ground level is 37 inches. Poles will

be oriented in a delta configuration (one overhead ground wire at the top, two phases on one side and a single phase on the other) supported by suspension insulators at tangent structures and strain insulators at tension structures. All tangent poles with a line angle of 2 degrees or less will be directly embedded in the soil. Any structure with a line angle of greater than 2 degrees will be supported on a drilled shaft concrete foundation. Special horizontally configured structures (H-frame or 3 pole structures) may be required to cross under any higher voltage circuits in the corridor.

2.2 Conductors

Description of the conductors authorized by the Commission Here

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

Transmission Line Type	Conductor	Structure		Foundation	Height	Span
		Type	Material			

2.3 Substations and Associated Facilities

The Kellogg Substation facilities are proposed to be sited on 4 acres within a larger 10.8-acre parcel of land. Approximately 4 acres of the site will be used for the substation, access road, and stormwater drainage features. Site preparation would include installing erosion and sediment control BMPs, stripping topsoil, and hauling in structural fill to build up the subgrade for the substation pad. Once the substation pad is built to the subgrade, all areas will be restored, and the site will be ready for use. This work will occur the year prior to transmission line and substation construction to allow for one winter to allow the ground to settle.

Construction within the newly prepared substation pad will consist of drilled pier foundations ranging in size from three to 7.0 feet in diameter and 10 to 35 feet deep. The foundations will be installed to support transmission line dead-end structures, static masts, and bus and equipment support structures. Slabs-on-grade 8.0-feet square by 2.0 feet thick will be used for 161-kV circuit breakers, and 6.0-foot square by 2.0 feet thick will be used for 69-kV circuit breakers. The control building will be on a 20-foot by 40-foot- by 1-foot-thick concrete slab. Transformer and reactor secondary oil containment will be a concrete-lined pot filled with stone. Conduit for control and communication cables and grounding conductor will be installed prior to the placement of the final layer of crushed rock surfacing. The ground grid will be installed 18 inches below the subgrade surface throughout the substation pad and extend 4.0 feet outside the substation security wall.

3 DESIGNATED ROUTE

The route designated by the Commission is described below and shown on the route maps attached to this route permit (Designated Route). The Designated Route is generally described as follows:

Description of Designated Route Here

The Designed Route includes an anticipated alignment (centerline) and a right-of-way. The right-of-way is the physical land needed for the safe operation of the transmission line. The Permittee shall locate the alignment and associated right-of-way within the Designated Route unless otherwise authorized by this route permit or the Commission. The Designated Route provides the Permittee with flexibility for minor adjustments of the alignment and right-of-way to accommodate landowner requests and unforeseen conditions.

4 RIGHT-OF-WAY

This route permit authorizes the Permittee to obtain a new permanent right-of-way for the transmission line up to 100 feet in width. The permanent right-of-way is typically 50 feet on both sides of the transmission line measured from its alignment.

The transmission line's anticipated alignment is intended to minimize potential impacts relative to criteria identified in Minn. R. 7850.4100. The final alignment must generally conform to the anticipated alignment identified on the route maps, unless changes are requested by individual landowners and agreed to by the Permittee or for unforeseen conditions that are encountered or as otherwise provided for by this route permit.

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

Where the transmission line parallels existing highway and other road rights-of-way, the transmission line right-of-way shall occupy and utilize the existing right-of-way to the maximum extent possible; consistent with the criteria in Minn. R. 7850.4100 and the other requirements of this route permit; and for highways under the jurisdiction of the Minnesota Department of Transportation, the procedures for accommodating utilities in trunk highway rights-of-way.

5 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the Transmission Facility over the life of this route permit.

5.1 Route Permit Distribution

Within 30 days of issuance of this route permit, the Permittee shall provide all affected landowners with a copy of this route permit and the Complaint Procedures. An affected landowner is any landowner or designee that is within or adjacent to the Designated Route. In no case shall a landowner receive this route permit and Complaint Procedures less than five days prior to the start of construction on their property. The Permittee shall also provide a copy of this route permit and the Complaint Procedures to the applicable regional development commissions, county environmental offices, and city and township clerks. The Permittee shall file with the Commission an affidavit of its route permit and Complaint Procedures distribution within 30 days of issuance of this route permit.

5.2 Access to Property

The Permittee shall notify landowners prior to entering or conducting maintenance within their property, unless otherwise negotiated with the landowner. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce (Commerce) or Commission staff.

5.3 Construction and Operation Practices

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the permitting record for this Transmission Facility unless this route permit establishes a different requirement in which case this route permit shall prevail.

5.3.1 Field Representative

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

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

5.3.2 Employee Training – Route Permit Terms and Conditions

The Permittee shall train all employees, contractors, and other persons involved in the Transmission Facility construction regarding the terms and conditions of this route permit. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

5.3.3 Independent Third-Party Monitoring

Prior to any construction, the Permittee shall propose a scope of work and identify an independent third-party monitor to conduct Transmission Facility construction monitoring on behalf of Commerce. The scope of work shall be developed in consultation with and approved by Commerce. This third-party monitor will report directly to and will be under the control of Commerce with costs borne by the Permittee.

5.3.4 Public Services, Public Utilities, and Existing Easements

During Transmission Facility construction, the Permittee shall minimize any disruption to public services or public utilities. To the extent disruptions to public services or public utilities occur these shall be temporary, and the Permittee shall restore service promptly. Where any impacts to utilities have the potential to occur the Permittee shall work with both landowners and local entities to determine the most appropriate mitigation measures if not already considered as part of this route permit.

The Permittee shall cooperate with road authorities to develop appropriate signage and traffic management during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

5.3.5 Temporary Workspace

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

The Permittee may construct temporary driveways between the roadway and the structures to minimize impact using the shortest route feasible. The Permittee shall use construction mats to minimize impacts on access paths and construction areas. The Permittee shall submit the location of temporary workspaces and driveways with the plan and profile pursuant to Section 9.1.

5.3.6 Noise

The Permittee shall comply with noise standards established under Minn. R. 7030.0010 to 7030.0080. The Permittee shall limit construction and maintenance activities to daytime working hours to the extent practicable.

5.3.7 Aesthetics

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

See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.3.8 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program. If construction of the Transmission Facility disturbs more than one acre of land, or is sited in an area designated by the MPCA as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater Permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan that describes methods to control erosion and runoff.

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

5.3.9 Wetlands and Water Resources

The Permittee shall design wetland impact avoidance measures and implement them during construction of the Transmission Facility. Measures shall include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, the Permittee shall construction in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. When construction during winter is not possible, the Permittee shall use wooden or composite mats to protect wetland vegetation.

The Permittee shall contain soil excavated from the wetlands and riparian areas and not place it back into the wetland or riparian area. The Permittee shall access wetlands and riparian areas using the shortest route feasible in order to minimize travel through wetland areas and prevent unnecessary impacts. The Permittee shall not place staging or stringing set up areas within or adjacent to wetlands or water resources, as practicable. The Permittee shall assemble power pole structures on upland areas before they are brought to the site for installation.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet all requirements of the U.S. Army Corps of Engineers, Minnesota Department of Natural Resources (DNR), and local units of government. See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.3.10 Vegetation Management

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

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

See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.3.11 Application of Pesticides

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

communication and application records and provide them upon the request of Commerce or Commission staff.

5.3.12 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by Transmission Facility construction activities. The Permittee shall develop an Invasive Species Prevention Plan and file it with the Commission at least 14 days prior to the pre-construction meeting. The Permittee shall comply with the most recently filed Invasive Species Prevention Plan.

5.3.13 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee shall select site appropriate seed certified to be free of noxious weeds. To the extent possible, the Permittee shall use native seed mixes. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

5.3.14 Roads

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

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

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

See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.3.15 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to archaeological and historic resources when constructing the Transmission Facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office (SHPO), the State Archaeologist, and the Minnesota Indian Affairs Council (MIAC). Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Transmission Facility impacts on the resource consistent with SHPO and State Archaeologist requirements.

Prior to construction, the Permittee shall train workers about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law enforcement, the State Archaeologist, and MIAC. The Permittee shall not resume construction at such location until authorized by local law enforcement or the State Archaeologist. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff. See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.3.16 Avian Protection

The Permittee in cooperation with the DNR shall identify areas of the transmission line where bird flight diverters will be incorporated into the transmission line design to prevent large avian collisions attributed to visibility issues. Standard transmission design shall incorporate adequate spacing of conductors and grounding devices in accordance with Avian Power Line Interaction Committee standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices. The Permittee shall submit documentation of its avian protection coordination with the DNR with the plan and profile pursuant to Section 9.1.

5.3.17 Restoration

The Permittee shall restore the right-of-way, temporary work spaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the Transmission Facility. Restoration within the right-of-way must be compatible with the safe operation, maintenance, and inspection of the transmission line. Within 60 days after completion of all restoration activities, the Permittee shall file with the Commission a Notification of Restoration Completion.

5.3.18 Cleanup

The Permittee shall remove and properly dispose of all waste and scrap from the right-of-way and all premises on which construction activities were conducted upon completion of each task. The Permittee shall remove and properly dispose of all personal litter, including bottles, cans, and paper from construction activities on a daily basis.

5.3.19 Pollution and Hazardous Wastes

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

5.3.20 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

5.4 Electrical Performance Standards

5.4.1 Grounding

The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any non-stationary object within the right-of-way, including but not limited to large motor vehicles and agricultural

equipment. All fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.

5.4.2 Electric Field

The Permittee shall design, construct, and operate the transmission line in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms. See Section 6 – Special Conditions for additional stipulations required with issuance of the permit.

5.4.3 Interference with Communication Devices

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the Transmission Facility, the Permittee shall take whatever action is necessary to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the Transmission Facility. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.

5.5 Other Requirements

5.5.1 Safety Codes and Design Requirements

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

5.5.2 Other Permits and Regulations

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the Transmission Facility and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits

and regulations. The Permittee shall submit a copy of such permits upon the request of Commerce or Commission staff.

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission an Other Permits and Regulations Submittal that contains a detailed status of all permits, authorizations, and approvals that have been applied for specific to the Transmission Facility. The Other Permits and Regulations Submittal shall also include the permitting agency or authority, the name of the permit, authorization, or approval being sought, contact person and contact information for the permitting agency or authority, brief description of why the permit, authorization, or approval is needed, application submittal date, and the date the permit, authorization, or approval was issued or is anticipated to be issued.

6 SPECIAL CONDITIONS

Special conditions shall take precedence over other conditions of this route permit should there be a conflict.

6.1 Winter Tree Removal

The Permittee may request to cut and remove trees, but not grub or grind stumps, prior to Project construction approval as described in Section 9.2 of this route permit. In its request the Permittee shall file a Tree Removal Management Plan, which shall be developed in coordination with Commerce staff, and include a description of the activities, equipment and methodology proposed, figures showing tree removal locations and relevant mitigation measures. The Permittee may not proceed to cut and remove trees until it has been notified in writing by the Commission of the Tree Removal Management Plan approval.

Special conditions include the presence of karst topographic features (sinkholes) in the general area, federally and state-protected species, sensitive ecological communities, archaeological and cultural resources, aesthetics, emergency services, roads and highways, and stray voltage.

Stray Voltage

The Applicant shall conduct pre- and post-construction testing of potentially impacted structures and facilities will be performed to mitigate adverse impacts and address concerns. The Applicant should encourage landowners with structures or facilities within 500 feet of the transmission lines to contact their local electric service provider to discuss the situation and encourage on-site investigations. Appropriate design techniques such as cancellation, separation, and grounding of non-energized conductors or conductive objects will be utilized to minimize the potential for induction issues.

Emergency Services

The Applicant will contact local emergency responders prior to construction to discuss measures to avoid any disruptions to emergency services.

Roads and Highways

The Applicant will implement the following measures to avoid impacts to roadways:

- Coordinate with affected road authorities to schedule large material/equipment deliveries to avoid periods of high traffic volumes.
- When appropriate, pilot vehicles will accompany the movement of heavy equipment.
- Use traffic control barriers and warning devices when appropriate.

Karst Survey Plan

The Applicant will develop a Karst Survey Plan that will identify the locations of the proposed geotechnical investigations in relation to proposed structure locations and geophysical studies. They will coordinate with the MDNR regarding the Karst Survey Plan prior to execution of the geotechnical investigations. Two geophysical methods will be performed due to different limitations associated with each method: Electrical Resistivity (ER) and Multichannel Analysis of Surface Waves (MASW). The Applicant will develop a Karst Contingency Plan prior to construction that includes actions to take to mitigate any unexpected voids encountered during construction. They will work with the MDNR to develop the Karst Contingency Plan prior to construction.

Cultural and Archaeological Resources

Given the lack of previous survey over much of the ROI, it is recommended that a Phase I archaeological reconnaissance of the final route and substation location be conducted. A two-phased approach is recommended to complete the reconnaissance: pedestrian walk over and intensive survey. A walk over of the entire selected route to identify obvious surface indicators such as mounds should be completed as the phase. The second phase should consist of an intensive archaeological inventory of a 50-foot buffer around proposed pole locations (The Kellogg Substation has been previously inventoried for archaeological resources.). The intensive inventory should involve a surface examination for artifacts and other signatures indicative or archaeological resources where the ground can be seen and/or systematic shovel testing in areas where ground cover hinders the identification of artifacts or alluvial soils where the is a potential for buried archaeological site. The inventory should follow the accepted protocols by Tribal and State Historic Preservation offices, and these offices should be engaged in this investigation. Regional tribal representatives should be allowed to participate in the inventory. In addition to the route, the inventory should include any proposed access to the Project as well

as any associated equipment or construction yard. The reconnaissance should photograph nearby structures and buildings older than 50 years. A technical report summarizing this work should be submitted to the Tribal and State Historic Preservation offices of review and comments. Identified archaeological resources should be avoided using the approaches developed from coordination with Tribal and State Historic Preservation offices.

Minnesota Department of Natural Resources Requirements

Public Waters – the Applicant will adhere to the requirements set forth by the MDNR Utility License to Cross Public Waters consultation process:

- Limiting grading and excavation to areas surrounding pole structure foundations, and only as needed along access roads and workspace areas for a level and safe working area.
- Installing construction mats for travel lanes in wetlands and other specific locations.
- Installation and maintenance of a buffer between the project and MBS sites.
- Confine construction to the side opposite of the BMS site. If not feasible, restrict construction to existing road rights-of-way
- Minimize vehicle disturbance in the area, avoiding parking and stockpiling within the area.
- All disturbed areas will be revegetated using "Noxious Weeds; None Found" seed mixes.
- All disturbed areas will be revegetated using seed mixes labelled "Noxious Weeds; None Found" in accordance with regulations and will utilize yellow tag seed when available.
- Compliance with MPCA Construction Stormwater General Permit, including stabilization requirements, and inspection, maintenance and repair of erosion and sediment control BMPs. Certified weed-free straw or weed-free hay will be used for erosion and sediment control BMPs.
- All construction equipment must be clean prior to entering and before leaving the work site.
- Manual, mechanical, or chemical management of invasive and noxious weed infestations.
- The Construction Field Representative will oversee BMP installation and effectiveness.

Ecologically Significant Areas – The Applicant will continue to consult with the MDNR regarding implementation of BMPs identified below.

MDNR staff recommended that the project be designed to avoid impacts to the native plant communities by confining construction activities to the opposite site of the road. They recommend the following actions to minimize disturbance:

- To the extent practicable, operate within previously disturbed areas
- Retain a buffer between the proposed activities and both MBS sites.

- Confine construction activities to the opposite side of the road for MBS Sites and rare community. If not feasible, confine construction activities to existing road rights-of-way.
- Minimize vehicular disturbance in these areas by allowing only vehicles necessary for the proposed work.
- Do not stage or store vehicles, equipment, or material (including fill material) in these areas.
- If possible, conduct work in these area when the ground is frozen.
- Inspect and clean equipment prior to operation to avoid spread of invasive species.
- Use effective erosion prevention and sediment control measures.
- Revegetate disturbed soil with a suitable native seed mix as soon as construction as possible.
- Use only weed-free mulches, topsoil, and seed mixes. Mixes with birdsfoot trefoil (*Lotus corniculatus*) and Crown vetch (*Coronilla varia*) are prohibited.

State-protected Species – The Applicant will continue to consult with the MDNR regarding implementation of BMPs identified below.

MDNR staff requested that – if feasible – initial disturbance to grasslands and tree and shrub removal be from May 15 through August 15 to avoid disturbing nests for the following species of special concern:

- Bell's Vireo
- Lark Sparrow

MDNR staff recommended surveying for the following species of special concern prior to construction, so that they could be avoided:

- Kentucky Coffeetree

Specific required mitigation measures for State-protected species found in the vicinity of the project are listed below:

Blanding's Turtle and Wood Turtle

Specific mitigation measures and best management practices for the Blandings Turtle include the following:

- Avoid wetland and aquatic impacts during hibernation season between September 15th and April 15th, if the area is suitable for hibernation.
- Erosion and sediment control should be limited to wildlife friendly erosion control to avoid the inadvertent take of Blandings' turtles.
- Hydro-mulch products should not contain any materials with synthetic (plastic) fiber additives, as the fibers can re-suspend and flow into waterbodies.
- Construction areas (especially aquatic or wetland areas) should be thoroughly checked for turtles before the use of heavy equipment or any ground disturbance on a daily basis.
- Check any holes that have been left unattended for prolonged periods for turtles before

being filled.

- The Blanding's Turtle flyer must be given to all contractors working in the area. Illegal collection is a concern with wood turtles so do not post any signs that would bring attention to the presence of wood turtles.[1]
- Monitor for turtles during construction. Report any sightings to Reports.NHIS@state.mn.us with date, observer, location, and a photograph of the turtle.
- If turtles are in imminent danger, they must be moved by hand out of harm's way. Otherwise, they are to be left undisturbed. Helping Turtles Across the Road should be consulted for guidelines on how to move turtles safely out of danger.[2]
- Contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented.

Timber Rattlesnake

Specific mitigation measures and best management practices for the Timber Rattlesnake include the following:

- Crews working in the area must be advised that if they encounter any snakes, they should not disturb the snakes.
- Erosion and sediment control must be limited to wildlife life friendly erosion control to avoid the inadvertent take of timber rattlesnakes.[3]
- Wear appropriate personal protection equipment, such as thick pants, boots, and leather gloves.
- Care should be taken around stock-piled materials, as snakes use these materials as shelter.
- Report any sightings to Reports.NHIS@state.mn.us with the date, observer, location, and photograph of the timber rattlesnake.
- Contact Review.NHIS@state.mn.us with subject line Avoidance for MCE-2023-00935 to confirm if the described avoidance measures will be implemented

Seaside Three-awn, Clasping Milkweed, and Beach Heather

Seaside Three-awn, Clasping Milkweed, and Beach Heather have been documented in the assessment area in savanna and upland prairie communities. All potential habitats for these species must be avoided. If avoidance is not possible, the Applicant will use a qualified surveyor to conduct a survey for potentially endangered and threatened species in the area. Once a final route has been selected, the Applicant will work with MDNR staff to implement avoidance and conservation measures necessary to minimize impacts to these species.

Federally protected Species – The Applicant will continue to consult with the USFWS regarding implementation of BMPs for the Northern Long-eared and Tricolored bats as it relates to tree clearing. Additionally, If Bald Eagle nests are identified within 660 feet of construction activities

[1] https://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/flyer.pdf
[2] https://www.dnr.state.mn.us/reptiles_amphibians/helping-turtles-roads.html
[3] https://files.dnr.state.mn.us/eco/nongame/wildlife-friendly-erosion-control.pdf

during the eagle's active season, the Applicant will coordinate with the USFWS and MDNR regarding potential impacts and to obtain the necessary permits. The Applicant will adhere to guidance provided

7 DELAY IN CONSTRUCTION

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

8 COMPLAINT PROCEDURES

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the complaint procedures that will be used to receive and respond to complaints. The complaint procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this route permit.

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

9 COMPLIANCE REQUIREMENTS

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

9.1 Pre-Construction Meeting

Prior to the start of construction, the Permittee shall participate in a pre-construction meeting with Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the anticipated construction start date.

9.2 Plan and Profile

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission, and provide Commerce, and the [Environmental department(s) of the county(s)] where the Transmission Facility, or portion of the Transmission Facility, will be constructed with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction, structure specifications and locations, cleanup, and restoration for the transmission line. The documentation shall include maps depicting the plan and profile including the right-of-way, alignment, and structures in relation to the route and alignment approved per this route permit.

The Permittee may not commence construction until the earlier of (i) 30 days after the pre-construction meeting or (ii) until the Commission staff has notified the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this route permit.

If the Commission notifies the Permittee in writing within 30 days after the pre-construction meeting that it has completed its review of the documents and planned construction, and finds that the planned construction is not consistent with this route permit, the Permittee may submit additional and/or revised documentation and may not commence construction until the Commission has notified the Permittee in writing that it has determined that the planned construction is consistent with this route permit. If the Permittee intends to make any significant changes in its plan and profile or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, Commerce, and county staff at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this route permit.

9.3 Status Reports

The Permittee shall file monthly Construction Status Reports beginning with the pre-construction meeting and until completion of restoration. Construction Status Reports shall describe construction activities and progress, activities undertaken in compliance with this route permit, and shall include text and photographs.

If the Permittee does not commence construction of the Transmission Facility within six months of this route permit issuance, the Permittee shall file Pre-Construction Status Reports on the anticipated timing of construction every six months beginning with the issuance of this route permit until the pre-construction meeting.

9.4 In-Service Date

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

9.5 As-Builts

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

9.6 GPS Data

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

9.7 Right of Entry

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety standards:

(a) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations.

(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations.

(c) To sample and monitor upon the facilities easement of the property.

(d) To examine and copy any documents pertaining to compliance with the conditions of this route permit.

10 ROUTE PERMIT AMENDMENT

This route permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this route permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

11 TRANSFER OF ROUTE PERMIT

The Permittee may request at any time that the Commission transfer this route permit to another person or entity (transferee). In its request, the Permittee must provide the Commission with:

(a) the name and description of the transferee;
(b) the reasons for the transfer;
(c) a description of the facilities affected; and
(d) the proposed effective date of the transfer.

The transferee must provide the Commission with a certification that it has read, understands and is able to comply with the plans and procedures filed for the Transmission Facility and all conditions of this route permit.

12 REVOCATION OR SUSPENSION OF THIS ROUTE PERMIT

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