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Jamestown to Ellendale

Consolidated Application to the North Dakota Public Service Commission for a Certificate of Corridor Compatibility and Route Permit

345-kV Electric Transmission Line

Stutsman, LaMoure, and Dickey Counties, North Dakota

August 2025

OTTER TAIL POWER COMPANY

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List of Acronyms

ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
APLIC	Avian Power Line Infrastructure Committee
BGEPA	Bald and Golden Eagle Protection Act
BLM	United States Bureau of Land Management
BMPs	Best Management Practices
BSSE	Big Stone South to Ellendale
CFR	Code of Federal Regulations
Commission	North Dakota Public Service Commission (also PSC)
CPCN	Certificate of Public Convenience and Necessity
CRP	Conservation Reserve Program
CUP	Conditional Use Permit
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted sound level in decibels
EF	Electric Field
EHVTL	Extra High Voltage Transmission Lines
EMF	Electric and Magnetic Fields
EMR	Electromagnetic Radiation
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FM	Frequency Modulated
FR	Federal Register
GIS	Geographic Information System
GRP	Grassland Reserve Program
HVTL	High Voltage Transmission Line
Hz	hertz
ICBM	Intercontinental Ballistic Missile
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
IPaC	Information for Planning and Conservation
kV	Kilovolt
kV/m	Kilovolts per meter
LRTP	Long-Range Transmission Planning
LWCF	Land and Water Conservation Fund
m	Meter
mA	milliamperes
MBTA	Migratory Bird Treaty Act
Montana-Dakota	Montana-Dakota Utilities Co.
MF	Magnetic Field
mG	milliGauss
MISO	Midcontinent Independent System Operator
MTEP	Midwest ISO Transmission Expansion Plan
MVP	Multi-Value Project
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NDAC	North Dakota Administrative Code
NDAERO	North Dakota Aeronautics Commission
NDCC	North Dakota Century Code
NDCRS	North Dakota Cultural Resources Survey
NDDA	North Dakota Department of Agriculture
NDDEQ	North Dakota Department of Environmental Quality
NDDES	North Dakota Division of Emergency Services

NDDOT	North Dakota Department of Transportation
NDDTL	North Dakota Department of Trust Lands
NDDWR	North Dakota Department of Water Resources
NDGFD	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey
NDPDES	North Dakota Pollutant Discharge Elimination System
NDPRD	North Dakota Parks and Recreation Department
NDRAM	North Dakota Risk Assessment Map Service
NDSHPO	North Dakota State Historic Preservation Office
NDTA	North Dakota Transmission Authority
NERC	North American Electric Reliability Corporation
NESC	National Electric Safety Code
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NIEHS	National Institute of Environmental Health Sciences
NLCD	National Land Cover Database
NLEB	Northern Long-eared Bat
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWR	National Wildlife Refuges
OHWM	Ordinary High-Water Mark
OPGW	Optical Ground Wire
OTP	Otter Tail Power
PLOTS	Private Land Open to Sportsmen
PSC	North Dakota Public Service Commission (also Commission)
ROW	Right-of-way
SHSND	State Historic Society of North Dakota
SPCC	Spill Prevention, Control, and Countermeasures
SPL	Sound Pressure Level
SSURGO	Soil Survey Geographic
STATSGO	State Soil Geographic
STGR	Sharp-Tailed Grouse
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
TP	Twisted Pair
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USBR	United States Bureau of Reclamation
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forestry Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WAPA	Western Area Power Administration
WMA	Wildlife Management Areas
WMD	Wetland Management District
WOTUS	Waters of the United States
WPA	Waterfowl Protection Areas
WRP	Wetland Reserve Program

1.0 Introduction

Otter Tail Power Company (OTP) and Montana-Dakota Utilities Co. (Montana-Dakota) (jointly, the Applicants) are proposing to jointly construct, own, and operate approximately 92 miles of new, double circuit, 345-kilovolt (kV) transmission line within a 150-foot-wide Corridor from OTP's existing Jamestown 345-kV Substation in Stutsman County to Montana-Dakota's existing Ellendale 345-kV Trans Substation in Dickey County (Project). The transmission line is planned to initially be constructed with one circuit, one optical ground wire, and one overhead ground wire. A second, 345-kV circuit will be installed in the future, when the need arises. In addition to the new high-voltage transmission line, the Project includes a substation expansion at the Jamestown 345-kV Substation, and modifications to the Ellendale 345-kV Trans Substation. The Project was identified and approved by the Midcontinent Independent System Operator, Inc. (MISO) as part of its Long-Range Transmission Planning Tranche 1 Portfolio through the 2021 MISO Transmission Expansion Plan. Construction is anticipated to begin in 2026 and end in 2028 with an anticipated in-service date by the end of 2028.

The Applicants hereby jointly submit this Consolidated Application to the North Dakota Public Service Commission (Commission) for a Certificate of Corridor Compatibility and Route Permit (Application).

1.1 Compliance with the Energy Conversion and Transmission Facility Siting Act – NDCC Chapter 49-22

The North Dakota Energy Conversion and Transmission Facility Siting Act (Siting Act) requires applications for a Certificate of Corridor Compatibility (Corridor Certificate) and Route Permit to meet the criteria set forth in North Dakota Century Code (NDCC) Chapter 49-22. The siting of a transmission facility is to be made in an orderly manner compatible with environmental preservation and the efficient use of resources (NDCC Section 49-22-02). Consistent with this requirement, the Applicants have sited and designed the Project to minimize potential environmental impacts and utilize existing corridors, section lines, and field breaks to the extent practicable.

Within this Application, the Applicants present information required by the Siting Act, including their consideration of exclusion areas, avoidance areas, selection criteria, and policy criteria set forth in North Dakota Administrative Code (NDAC) Section 69-06-08-02 that were used in selecting the proposed Corridor and Route.

The sections below outline the information required to fulfill the requirements for a Corridor Certificate and Route Permit and identify where these requirements are addressed in this Application.

1.1.1 Certificate of corridor compatibility

Per NDCC 49-22-08 and NDCC 49-22-09, Table 1.1-1 presents a description of the requirements that must be contained within an application for a Corridor Certificate and

designation of a corridor and route, along with a reference on where those requirements are contained within this Application.

Table 1.1-1. Certificate of corridor compatibility completion checklist

State Authority	Description	Application Section
NDCC. 49-22-08: Application for a certificate - Notice of filing - Amendment - Designation of a site or corridor.		
a.	A description of the size and type of facility.	1.0, 4.1
b.	A summary of any studies which have been made of the environmental impact of the facility.	6.0, Appendices
c.	A statement explaining the need for the facility.	2.0
d.	An identification of the location of the preferred site for any electric energy conversion facility.	N/A
e.	An identification of the location of the preferred corridor for any electric transmission facility.	1.2.2
f.	A description of the merits and detriments of any location identified and a comprehensive analysis with supporting data showing the reasons why the preferred location is best suited for the facility.	3.0
g.	A description of mitigative measures that will be taken to minimize all foreseen adverse impacts resulting from the location, construction, and operation of the proposed facility.	6.0, 6.16
h.	An evaluation of the proposed site or corridor with regard to the applicable considerations set out in section 49-22-09 and the criteria established pursuant to section 49-22-05.1.	3.0
i.	Such other information as the applicant may consider relevant or the commission may require.	4.0, 5.0, 6.0, 7.0, 8.0, 9.0
NDCC. 49-22-09: Factors to be considered in evaluating applications and designation of sites, corridors, and routes.		
a.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.	9.1
b.	The effects of new electric energy conversion and electric transmission technologies and systems designed to minimize adverse environmental effects.	9.2
c.	The potential for beneficial uses of waste energy from a proposed electric energy conversion facility.	9.3
d.	Adverse direct and indirect environmental effects that cannot be avoided should the proposed site or route be designated.	9.4
e.	Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.	9.5
f.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	9.6
g.	The direct and indirect economic impacts of the proposed facility.	9.7
h.	Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.	9.8
i.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	9.9

State Authority	Description	Application Section
j.	The effect of the proposed site or route on areas unique because of biological wealth or because the areas are habitats for rare and endangered species.	9.10
k.	Problems raised by federal agencies, other state agencies, and local entities.	9.11

1.1.2 Route permit application

Per NDCC 49-22-08.01 and NDAC 69-06-05-01(2), Table 1.1-2 presents a description of the requirements that must be contained within an application for a Route Permit along with a reference on where those requirements are contained within this Application.

Table 1.1-2. Route permit completion checklist

State Authority	Description	Application Section
NDCC. 49-22-08.1: Application for a permit - Notice of filing - Amendment - Designation of a route.		
a.	A description of the type, size, and design of the proposed facility.	1.0, 4.1
b.	A description of the location of the proposed facility.	1.2.2
c.	An evaluation of the proposed route with regard to the applicable considerations set out in section 49-22-09 and the criteria established pursuant to section 49-22-05.1.	3.0
d.	A description of mitigative measures that will be taken to minimize all foreseen adverse impacts resulting from the location, construction, and operation of the proposed facility.	6.0, 6.16
e.	A description of the right-of-way preparation and construction and reclamation procedures.	5.1, 5.2
f.	A statement setting forth the manner in which:	5.3
	The utility will inform affected landowners of easement acquisition and necessary easement conditions and restrictions.	
	The utility will compensate landowners for easements, without reference to the actual consideration to be paid.	
g.	Such other information as the utility may consider relevant or the commission may require.	2.0, 5.0, 6.0, 7.0. 8.0, 9.0
N.D. Admin. Code 69-06-05-01(2): Application Contents		
a.	A description of the following:	
1.	The type of facility proposed.	1.0, 4.1
2.	The purpose of the facility.	2.1
3.	The technology to be deployed.	4.1.1
4.	The type of product to be transmitted.	1.0, 4.1
5.	The source of the product to be transmitted.	1.0, 2.1, 4.1
6.	The final destination of the product to be transmitted.	1.0, 2.1
7.	The proposed size and design and any alternate size or design that was considered, including:	
a)	The width of right of way.	4.1.2
b)	The approximate length of facility.	4.1.2

State Authority	Description	Application Section
c)	The estimated span length for electric facilities.	4.1.2
d)	The anticipated type of structure for electric facilities.	4.1.2
e)	The voltage for electric facilities.	4.1.2
f)	The requirement for and general location of any new associated facilities.	4.1.3
g)	The estimated distance between surface structures for pipeline facilities.	N/A
h)	The pipe size for pipeline facilities.	N/A
i)	The maximum design operating pressure and temperature for pipeline facilities.	N/A
j)	The maximum design flow rate for pipeline facilities.	N/A
k)	The number and general location of compressor or pumping stations.	N/A
b.	The anticipated time schedule for accomplishing major events, including:	
1.	Obtaining the certificate of corridor compatibility.	1.2.3
2.	Obtaining the route permit.	1.2.3
3.	Completing right-of-way acquisition.	1.2.3
4.	Starting construction.	1.2.3
5.	Completing construction.	1.2.3
6.	Testing operations.	1.2.3
7.	Commencing operations.	1.2.3
c.	A copy of each evaluative study or assessment of the environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received.	6.0, Appendices
d.	An analysis of the need for the proposed facility based on present and projected demand for the product transmitted, including the most recent system studies supporting the analysis of the need.	2.1
e.	A description of any feasible alternative methods for serving the need.	2.2, 2.3
f.	The width of a corridor must be at least ten percent of its length, but not less than one mile [1.61 kilometers] or greater than six miles [9.66 kilometers] unless another appropriate width is determined by the commission.	The Applicants propose a one-mile-wide Study Area with a 150-foot-wide Project Corridor, the combination of which is sufficient for the Commission to evaluate the factors addressed in N.D.C.C. Section 49-22-09
g.	A study area that includes a proposed corridor of sufficient width to enable the commission to evaluate the factors addressed in NDCC section 49-22-09.	See Table 1.1-1

State Authority	Description	Application Section
h.	A discussion of the factors in NDCC section 49-22-09 to aid the commission's evaluation of the proposed route.	See Table 1.1-1
i.	A discussion of the applicant's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.	6.0
j.	Identification and map of the criteria that led to the proposed route location within the designated corridor, including exclusion areas, avoidance areas, selection criteria, policy criteria, design construction limitations, and economic considerations.	3.0
k.	A discussion of the relative value of each criteria and how the applicant selected the proposed corridor location, giving consideration to all criteria and how the location, construction, and operation of the facility will affect each criteria.	3.0
l.	A discussion of the general mitigative measures that the applicant will take to minimize adverse impacts that result from a route location in the proposed corridor and the construction and operation of the facility.	6.0, 6.16
m.	The qualifications of each person involved in the corridor location study.	10.0
n.	A map identifying the criteria that led to the proposed route location within the designated corridor and the location of any new associated facilities. Several different criteria may be shown on each map depending on the map scale and the density and nature of the criteria.	Appendix A, Figures 3.7-1, 3.7-2, 3.7-3
o.	An eight and one-half-inch by eleven-inch, black and white map suitable for newspaper publication depicting the site area.	Appendix A, Figure 1.2-1
p.	A discussion of present and future natural resource development in the area.	9.8
q.	Map and GIS requirements.	11.1, Appendix A, GIS Provided

1.2 Project overview

1.2.1 Application terms

Terms used in this Application and associated with this Project are defined below in Table 1.2-1.

Table 1.2-1. Application terms

Term	Definition
Applicants	Otter Tail Power Company (OTP) and Montana-Dakota Utilities Co. (Montana-Dakota).
Corridor[1]	The area around the Route consisting of 150 feet in width generally centered on the Route. The expansion of the Jamestown Substation area, and where the Route ties in at the Ellendale Substation, have more widened Corridor widths.
Ellendale 345-kV Trans Substation	Existing Ellendale 345/230-kV Substation owned by Montana-Dakota. Modifications within the existing footprint will occur as part of the Project within the fenced boundaries.
Jamestown Substation	Existing Jamestown 345-kV Substation owned by OTP. Project will include an expansion of this substation.
MISO	Midcontinent Independent System Operator, Inc., an independently governed organization tasked with ensuring transmission network reliability and efficiency.
Owners	Upon completion, OTP and Montana-Dakota (the Applicants) will jointly own, operate, and maintain the Project.
Project	The entirety of the Jamestown to Ellendale 345-kV transmission line Project including Route, structures, Jamestown substation and Ellendale substation infrastructure upgrades, and right-of-way (ROW).
Route	The specific location of the transmission centerline within the designated Corridor.
Right-of-Way (ROW)	The 150-foot-wide easement area acquired along the Route to safely construct, operate, and maintain an electrical line.
Study Area	Generally, a 1-mile boundary centered around the Route.
Survey Area	Survey area for each resource is additionally defined in the relevant section(s). • **Sharp-Tailed Grouse (STGR) Leks**; 2-mile buffer; 1-mile on either side of the centerline. • **Desktop Wetland Delineations**; 500-foot buffer; 250 feet on either side of the centerline. • **Field Wetland Delineations**: Both a 500-foot and 150-foot buffer were used during field delineations which are clarified in text. • **Dakota Skipper**; 500-foot buffer; 250 feet on either side of the centerline**.** • **Northern Long-Eared Bat (NLEB)**; 500-foot buffer; 250 feet on either side of the centerline. • **Bald Eagle & Golden Eagle Nests**; Half-mile buffer; quarter mile on either side of the centerline.

[1] NDAC Section 69-06-05-01(2)(f) states the "width of the corridor must be at least ten percent of its length, but not less than one mile [1.61 kilometers] or greater than six miles [9.66 kilometers] unless another appropriate width is determined by the commission." The Applicants propose a one-mile-wide Study Area, with a 150-foot-wide Project Corridor, the combination of which is sufficient for the Commission to evaluate the factors addressed in NDCC Section 49-22-09.

Term	Definition
	• **Piping plover, Rufa red knot, Whooping crane**; paired with other surveys within the 500-foot buffer; 250 feet on either side of the centerline. • **Cultural Resources**: Class I desktop literature review completed within the Corridor and a 1-mile buffer. A Class III Cultural Resources Inventory was completed within a 500-foot corridor; 250 feet on either side of the centerline.

1.2.2 Location

The Project is located in southeast North Dakota, from approximately 5.4 miles north of the edge of Jamestown, North Dakota, to approximately 1.3 miles west of Ellendale, North Dakota, in Stutsman, LaMoure, and Dickey Counties. Appendix A, Figure 1.2-1 provides an overview of the approximately 92-mile Route and 150-foot-wide Corridor. Figure 1.2-2 provides a more detailed map of the Corridor and Route. Table 1.2-2 provides details on the location of the Project.

Table 1.2-2. Project location details

County	Township	Range	Sections
Stutsman	137 (Montpelier)	63	3, 4, 5, 8, 16, 17, 21, 28, 29, 32
	138 (Corwin)	63	2, 11, 14, 23, 26, 34, 35
	139 (Winfield)	62	6, 7
	139 (Homer)	63	11, 12, 13, 14, 23, 26, 35
	140 (Spiritwood)	62	7, 18, 19, 30, 31
	140 (Bloom)	63	1, 12
	141 (Rose)	62	30, 31
	141 (Fried)	63	13, 14, 15, 16, 17, 24, 25
LaMoure	133 (Willowbank)	63	4, 9, 16, 21, 28, 33
	134 (Wano)	63	4, 9, 16, 21, 28, 33
	135 (Russell)	63	4, 5, 8, 17, 20, 29, 32, 33
	136 (Adrian)	63	5, 6, 8, 9, 16, 21, 28, 33
Dickey	129 (Ellendale)	63	3, 9, 10
	130 (Elden)	63	3, 10, 15, 22, 27, 34
	131 (Keystone)	63	2, 11, 14, 23, 26, 34, 35
	132 (Valley)	63	5, 6, 8, 16, 17, 21, 26, 27, 28, 35

1.2.3 Project schedule

A preliminary schedule for the Project is provided in Table 1.2-3 below. The schedule is based on information known as of the date of this Application filing and is subject to adjustment and revisions as engineering and permitting progress.

Table 1.2-3. Schedule milestones

Activity	Actual/Anticipated Date
Certificate of Public Convenience and Necessity (CPCN) Filed	February 29, 2024
Public Service Commission (PSC or Commission) Order on CPCN	November 20, 2024
Consolidated Application for Certificate of Corridor Compatibility and Route Permit Filed	August 2025
PSC Order on the Certificate of Corridor Compatibility and Route Permit	Q2 2026
ROW acquisition	Q3 2023 – To Completion
Construction	Q3 2026 – Q4 2028
Test operations	Q4 2028
Commence operations/Energization	Q4 2028
Reclamation	2029

1.2.4 Project cost

The estimated total cost to construct the Project is approximately $406 million.

1.2.5 Project expansion

The Project involves the installation of double circuit capable structures along the proposed Route and Corridor. Initially, a single circuit 345-kV transmission line will be installed. As a part of this Application, the Applicants request authorization to add a second 345-kV transmission line when conditions warrant.

Other than adding the second circuit, the Applicants currently do not have any plans for future additions, modifications, or expansions of the Project.

2.0 Need for facility

2.1 Benefit and need analysis

An application for a CPCN was filed by the Applicants in February 2024 in Case No. PU-24-091. The Commission approved the CPCN on November 20, 2024. The Commission upheld their approval of the CPCN on June 18, 2025.

As discussed during the CPCN proceeding, the Project offers significant reliability benefits to the local area by introducing a new 345-kV transmission source into the Jamestown 345-kV Substation and the Ellendale 345-kV Trans Substation. OTP experienced an extreme weather event in the form of an ice storm in December 2023 that resulted in the only two 345-kV transmission lines serving the Jamestown area being out of service simultaneously. At that time, the capability of the transmission system was significantly reduced and as a result, large customers in the Jamestown area, including Cavendish Farms, Green Bison, Dakota Spirit Ag and Applied Digital, were forced to operate at reduced levels in order to keep the compromised transmission system operating within reliable limits. The Project will provide a new transmission line to serve the Jamestown area that will not only offer additional redundancy but also increase system capability to avoid a similar circumstance in the future. Likewise, the Ellendale 345-kV Trans Substation is at the end of a radial 345-kV transmission line today that can create voltage and reliability issues in the Ellendale area if the existing radial 345-kV line from Big Stone South is out of service, as shown in Figure 2.1-1.

Furthermore, the Project is one of eighteen (18) MISO-approved, high-voltage transmission projects that are planned to enable more reliable and economic energy delivery throughout the Midwest (as shown in Figure 2.1-2). The 18 projects are a part of MISO's Long-Range Transmission Planning (LRTP) Tranche 1 Portfolio detailed in the addendum to MISO's 2021 Transmission Expansion Plan (MTEP21 Addendum) (MISO 2021).

As outlined in the MTEP21 Addendum, the existing 230-kV system in eastern North Dakota, eastern South Dakota, and west-central Minnesota is heavily constrained for many different seasons of the year. This existing 230-kV system plays a key role in transporting energy across a large geographical area as generation is exported out of North Dakota to locations south and east. The 230-kV system is at capacity during many times of the year and has been shown to experience reliability concerns not only for N-1 contingencies (failure of a single generator or transmission facility), but also for system intact conditions (all facilities in-service).[2] In addition, voltage depressions have been identified by MISO for the Red River Valley Area along the South Dakota, North Dakota, and Minnesota border.[3] MISO's LRTP study has shown that the Project, in combination with the Big Stone South – Alexandria – Big Oaks 345-kV project, most effectively addresses these reliability concerns as compared to any other alternative transmission solutions. According to MISO, the Project provides additional outlets for North and South Dakota by tying two existing, 345-kV systems together while simultaneously unloading the existing, 230-kV system that is already at capacity and shows reliability concerns for

[2] MTEP21 Report Addendum: Section 6, Page 23
[3] MTEP21 Report Addendum: Section 6, Page 24

N-1 outages (failure of a single generator or transmission facility) and system intact situations. The Project also addresses thermal and voltage issues for western Minnesota and the eastern Dakotas and will improve reliability across the greater eastern Dakotas and Minnesota and will address voltage depression concerns identified by MISO for the Red River Valley Area along the South Dakota, North Dakota, and Minnesota border. More specifically, in a letter from MISO to the Executive Secretary of the Commission dated October 14, 2024,[4] MISO had identified that the Project, along with the Big Stone South – Alexandria – Big Oaks 345 kV project, alleviates excessive thermal loading on 40 existing lines and transformers, as well as mitigates 100 voltage issues resulting from N-1 contingency events and that these two projects also relieve thermal overloads on 80 existing lines and transformers and mitigates 99 voltage issues caused by N-1-1 contingencies. MISO further indicated that the highest N-1 thermal overloads in North Dakota that were addressed by these two projects were the Wahpeton 230/115 kV Transformer, Forman 230/115 kV Transformer, and the Forman 115 kV Substation bus tie. Likewise, MISO stated that the highest N-1-1 thermal overloads in North Dakota that were addressed by these two projects were the Forman 230/115 kV Transformer, Forman 115 kV Substation bus tie, Mandan – Napolean 230 kV line, Wahpeton 230/115 kV Transformer, East Bismarck – Linton 115 kV line, Ellendale 230/115 kV Transformer, and the Hankinson – Wahpeton 230 kV line.

The MTEP21 Addendum also outlines that the Project, in combination with the other seventeen (17) transmission projects in the Tranche 1 portfolio, will enable a more efficient delivery of energy from low-cost generators than the existing transmission system. The Tranche 1 portfolio provides for a more cost-effective regional build-out of generation resources that will not only better utilize the existing generation resources but also allow for the continued interconnection of new generation resources. In addition, the Tranche 1 portfolio alleviates congestion for a more efficient dispatch of the energy market by allowing lower cost generation resources to displace more costly resources to meet energy needs. MISO's analysis also identified additional economic value from the Tranche 1 portfolio by: (1) avoiding future transmission investment that would have been needed without the Tranche 1 portfolio, (2) reducing resource adequacy requirements that defers capital investment in new generation resources, and (3) avoiding load shedding that may arise due to severe weather events. When the economic benefits of the Tranche 1 portfolio are compared to the present value of the revenue requirements, the portfolio produces total benefits between 2.6 to 3.8 times greater than the costs across the MISO Midwest Subregion on a present value basis over 20 years.[5] On a more granular level, the benefit to cost ratio for Zone 1[6] was between 2.8 to 4.0 times greater than the present value of the LRTP Tranche 1 portfolio costs on a present value basis over 20 years.[7]

4 Case No. PU-24-091, Docket No. 19
5 *Id.,* Executive Summary, pg. 4.
6 Zone 1 is comprised of MISO member companies within Minnesota, eastern Montana, North Dakota, South Dakota, and western Wisconsin.
7 *Id*. The LRTP Tranche 1: Detailed Business Case Analysis located at: https://www.misoenergy.org/planning/long-range-transmission-planning/ (> under "Tranche 1 – Approved July 2022" and > "LRTP Tranche 1: Detailed Business Case Analysis"), its "Waterfall" tab, provides the reader with the ability to peel back the sources of the benefits. For example, peeling back the decarbonization benefit metric for Zone 1 results in a benefit to cost ratio of between 2.6 and 3.0

2.2 Description of studies developed

MISO completed studies for the LRTP beginning in August 2020 and subsequently prepared the Tranche 1 Portfolio report detailing 18 approved transmission projects in the Midwest subregion, of which the Project is one of these. MISO initiated the LRTP study with the objective of providing an orderly and timely transmission expansion plan that results in a transmission system that is reliable, cost-efficient, accessible, and flexible[8]. As part of the LRTP effort, MISO hosted monthly technical workshops with stakeholders, created reliability and economic models, revised the cost allocation methodology for MVPs to meet the unique needs of the region, performed reliability analysis, evaluated alternative solutions, and calculated economic benefits. MISO documented the results of its studies in its MTEP21 Addendum that led to its Board of Directors approving the Tranche 1 portfolio in July 2022. Appendix A, Figure 2.1-2 shows the proposed Project (shown as Project 1) in relation to the Tranche 1 portfolio.

2.3 No action and feasible alternative methods

Through the LRTP study, MISO evaluated several alternative combinations of two different projects to determine if any alternative more effectively addresses the reliability issues on the heavily constrained, 230-kV system in eastern North Dakota, eastern South Dakota, and west-central Minnesota. More specifically, MISO evaluated five alternative combinations of projects that were as follows:

1) Jamestown – Ellendale 345-kV Line and Big Stone South – Alexandria 345-kV Line

2) Jamestown – Ellendale 345-kV Line and Big Stone South – Hankinson – Fergus Falls 345-kV Line

3) Jamestown – Ellendale 345-kV Line and Big Stone South – Hazel Creek – Blue Lake 345-kV Line

4) Jamestown – Ellendale 345-kV Line and Big Stone South – Alexandria 345-kV Line and Big Stone South – Hazel Creek – Blue Lake 345-kV Line

5) Jamestown – Ellendale 345-kV Line and Big Stone South – Breckenridge – Barnesville 345-kV Line

Based on MISO's analysis, every combination of alternative projects considered by MISO includes the Project as a common solution to address the issues on the heavily constrained 230-kV system in eastern North Dakota, eastern South Dakota, and west-central Minnesota, which further reinforces the criticality of the Project to the Tranche 1 Portfolio (OTP and Montana-Dakota 2024).

(removing the decarbonization benefit metric value from the benefit to cost ratio for the MISO Midwest Subregion results in total benefits of between 2.4 and 2.9 times the Tranche 1 portfolio costs). Peeling back the decarbonization as well as the congestion and fuel savings for Zone 1 results in a ratio between 1.4 to 1.9.

[8] *Id.*, Pg 10-14.

The Applicants considered but rejected a no-action alternative for several reasons. Not constructing the Project could result in the transmission system in North Dakota and the Midwest from not being able to continue operating reliably and economically into the future. As described above, the Project provides reliability benefits to the local area, alleviates excessive thermal loadings, as well as mitigates several voltage issues. In addition, North Dakota and the other states in the MISO Midwest Subregion would not receive the full set of economic benefits that are provided by the Tranche 1 portfolio without the Project. To the extent that Project is not constructed, the realization of these significant benefits would be greatly diminished. Therefore, the no-action alternative was discarded from further consideration. MISO agreed with the Applicants as shown in its October 14, 2024, letter to the Executive Secretary to the Commission by stating that "not constructing the JETx Project will jeopardize the ability of the transmission system in North Dakota and the MISO Midwest Subregion to continue operating reliably and economically into the future." MISO went onto say in this same letter that "…customers in North Dakota and other states in the MISO Midwest Subregion will not receive the multitude of benefits provided by the LRTP Tranche 1 portfolio without the JETx Project."[9]

2.3.1 Underground transmission lines

No portion of the Project is proposed to be constructed as underground transmission. While it is common for lower-voltage distribution lines to be buried, it is rare for high-voltage transmission lines (HVTLs) to be constructed underground. Transmission lines can be placed underground, but there are several drawbacks to underground transmission as compared to overhead transmission:

- Underground transmission is substantially more costly to construct than overhead transmission. Based on the Applicants' estimates, the initial construction cost for undergrounding high voltage transmission lines, such as the Project, are estimated to be between five to ten times higher than overhead transmission lines. This higher construction cost is related to several factors, including but not limited to specialized equipment and labor to bury the transmission line, the type and number of cables, installation of separate conduits within a concrete duct bank, constructing large underground splice boxes (i.e. vaults) every approximately 1,200 feet to complete cable splices, and the need for riser stations along the route to transition from overhead to underground or from underground to overhead. Likewise, the life expectancy of underground transmission is less than overhead transmission resulting in a higher cost due to the need to replace underground transmission facilities sooner than overhead transmission facilities.

- Characteristics of underground HVTL cables are significantly different from those of overhead HVTL conductors, and these differences must be taken into account when considering integrating underground cables into a transmission system composed primarily of overhead lines. Extensive studies would need to be performed to determine what supplemental equipment would need to be installed to maintain acceptable system performance throughout the transmission system if all or parts of the Project were installed underground. This supplemental

[9] Case No. PU-24-091, Docket No. 19

equipment has the ability to further complicate operations, increase costs, and jeopardize the reliability benefits of the Project.

- Outage times of underground transmission failures are usually longer than overhead transmission because it takes longer to identify, uncover, and repair faulted cables. These extended outage times can result in higher costs for customers in the form of production downtime, less efficient generation resources being available to serve customers, and more expensive repairs to restore service.

- Underground transmission results in greater environmental and land use impacts than overhead transmission during construction due to the need to excavate significantly more earth along the route to install the underground cable. As a result, complying with the exclusion and avoidance areas defined under ND statute can be much more difficult because underground transmission lines require a continuous trench along the route whereas an overhead transmission line can span over sensitive areas and adjust structure locations.

- Underground transmission requires transition stations when switching from overhead transmission to underground transmission or vice versa. Each transition station requires acquiring approximately 1-2 acres of land that would need to be converted from its current land use into a transition station with a fence, access road and lighting. This land would need to be purchased and owned by the Applicants.

- Once constructed, underground transmission further restricts the use of agricultural land because the soil in the right-of-way cannot be disturbed below a certain depth for safety reasons.

- Construction of underground transmission would take approximately three to five times longer as compared to overhead transmission lines. Delays of this length could significantly impact Project cost and the timeliness of realizing the benefits of the Project both locally and regionally as part of MISO's Tranche 1 Portfolio.

Because of the significantly greater impacts, higher costs and longer schedule associated with underground transmission, the use of underground transmission is limited to locations where physical circumstances allow for no other option. The Applicants concluded that the environmental and land use setting within the Project area did not warrant underground construction as a reasonable configuration for this Project.

2.3.2 Ten-year plan

The Applicants have filed required Ten-Year Plans with the Commission. Montana-Dakota filed a Ten-Year Plan with the Commission on July 1, 2024, under Case No. PU-24-264. OTP submitted a Ten-Year Plan on July 1, 2024, under Case No. PU-24-285. This Project is consistent with the Ten-Year Plans on file with the Commission for both Applicants.

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3.0 Transmission facility corridor and route criteria

3.1 Approach

The Applicants selected the Project Corridor and Route based on a multi-faceted approach that considered federal, state, and local requirements, public comments received at public meetings, and analysis of environmental data. The sections below discuss the assessment of the North Dakota PSC exclusion and avoidance areas; selection criteria that relate to minimizing potential land use and environmental impacts; policy criteria that relate to maximizing public benefits; design and construction limitations; and additional routing considerations that played a role in the siting of the Project Corridor and Route.

The Project Corridor meets the criteria set forth in NDAC 69-06-08-02, which states that "exclusion and avoidance areas may be located within a corridor, but at no given point shall such an area or areas encompass more than 50 percent of the corridor width unless there is no reasonable alternative." The specific criteria and considerations made by the Applicants for the Project are outlined in the following subsections.

3.2 Exclusion areas

In accordance with NDAC Section 69-06-08-02(1), which implements NDCC Section 49-22-05.1, the geographical areas listed in Table 3.2-1 must be excluded in the consideration of a transmission facility route. Exclusion and avoidance areas may be located within a corridor, but at no given point can such an area or areas encompass more than 50 percent of the corridor width unless there is no reasonable alternative. NDAC 69-06-08-02 further specifies that a buffer zone of a reasonable width must be included to protect the integrity of the area. Natural screening may be considered in determining the width of the buffer zone.

Table 3.2-1. Exclusion areas

69-06-08-02(1) Exclusion Areas		Present within the Corridor	Application Section
(a) Designated or registered national:	parks;	No	6.8
	memorial parks;	No	6.7, 6.8
	historic sites and landmarks;	No	6.7
	natural landmarks;	No	6.7, 6.8
	monuments;	No	6.7, 6.8
	and wilderness areas.	No	6.2, 6.13, 6.15
(b) Designated or registered state:	parks;	No	6.8
	historic sites;	No	6.7, 6.8
	monuments;	No	6.7, 6.8
	historical markers;	No	6.7

69-06-08-02(1) Exclusion Areas		Present within the Corridor	Application Section
	archaeological sites;	Yes; Archaeological sites, as identified through a Class I Literature Search and a Class III Cultural Resources Inventory are present in the Corridor and Study Area, which the Project has sited to avoid. Appropriate buffers are being coordinated with NDSHPO.	6.7
	and nature preserves.	No	6.2, 6.13, 6.15
(c) County	parks and recreational areas;	No	6.8
	municipal parks;	No	6.8
	and parks owned or administered by other governmental subdivisions.	No	6.8
(d) Areas critical to the life stages of threatened or endangered animal or plant species.		No	6.14, 6.15
(e) Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.		No	6.13, 6.14, 6.15, 6.16
(f) Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility; and		No	6.2
(g) Areas within 30 feet on either side of a direct line between ICBM launch or launch control facilities to avoid microwave interference.		No	6.2

3.3 Avoidance areas

In accordance with NDAC Section 69-06-08-02(2), the geographical areas listed in Table 3.3-1 cannot be approved as a site for routing of a transmission facility unless the applicant shows that, under the circumstances, there is no reasonable alternative. NDAC Section 69-06-08-02(2) further requires a buffer zone of a reasonable width to protect the integrity of the area. In determining whether an avoidance area should be designated for a route, the Commission may consider, among other things, proposed management of adverse impacts; orderly siting of facilities; system reliability and integrity; efficient use of resources; and alternative routes. Economic considerations alone shall not justify approval of these areas. As with exclusion areas, a buffer zone of a reasonable width to protect the integrity of the area shall be included unless a distance is specified in the criteria, and natural screening may be considered in determining the width of the buffer zone.

Table 3.3-1. Avoidance areas

69-06-08-02(2) Avoidance Area		Present within the Corridor	Application Section
(a) Designated or registered national:	historic districts;	No	6.7
	wildlife areas;	No	6.2, 6.14
	wild, scenic, or recreational rivers;	No	6.8, 6.11
	wildlife refuges;	No	6.2, 6.15
	and grasslands.	No	6.2, 6.13, 6.15
(b) Designated or registered state:	wild, scenic, or recreational rivers;	No	6.8, 6.11
	game refuges;	No	6.2, 6.15
	game management areas;	No	6.2, 6.11, 6.12, 6.13
	forests;	No	6.2, 6.13
	forest management lands;	No	6.2, 6.13
	and grasslands.	No	6.2, 6.13
(c) Historical resources which are not designated as exclusion areas.		Yes; Historic resources, as identified through a Class I Literature Search and a Class III Cultural Resources Inventory are present in the Project Corridor and Study Area, which the Project will avoid. Appropriate buffers are being coordinated with NDSHPO.	6.7
(d) Areas that are geologically unstable.		Yes; Historic landslide material is present within the Corridor and impacts have been avoided.	6.10
(e) Within 500 feet [152.4 meters] of a:	residence,	Yes; There is one occupied residence within 500 feet of the Corridor. Per NDCC 49-22-05.1(2), a residence setback may be waived in writing by the owner of the residence. A waiver from the applicable owner has been obtained and is provided in Appendix B.	6.2, 6.3
	school	No	
	or place of business	No	
(f) Reservoirs and municipal water supplies.		No	6.10, 6.11
(g) Water sources for organized rural water districts		No	6.10, 6.11
(i) Areas of recreational significance which are not designated as exclusion areas.		No	6.8

3.4 Selection criteria

In accordance with NDAC Section 69-06-08-02(3), a site can be approved in an area only when the applicant demonstrates to the Commission that any significant adverse effects resulting from the location, construction, and operation of the facility in that area, as they relate to the criteria listed in Table 3.4-1 will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum. Table 3.4-1 demonstrates that there are no significant adverse effects resulting from the location, construction, and operation of the Project.

Table 3.4-1. Selection criteria

69-06-08-02(3) Selection Criteria	Potential Effects	Application Section
The impact upon agriculture:		
Agricultural production	Overall impacts are anticipated to be minimal largely in part to utilizing monopole structures. Approximately 4.5 acres of agricultural land will be permanently impacted, and 604.8 acres of agricultural land will be temporarily impacted by construction activities along the entire 92-mile route. Where practical, construction activities will be scheduled during periods when agricultural activities will be minimally affected. Landowners will be compensated for the permanent crop and forage loss from the structure and from the temporary crop and forage loss that occurs because of construction activities. If there is damage to soils from loss of topsoil, compaction, or damage to tile lines, those issues would be addressed with the respective landowner(s).	6.1, 6.2, 6.8
Family farms and ranches	The Project will not displace any farms or ranches. Negligible/minimal effects to family farms and ranches are anticipated. Transmission lines are a compatible use with existing family farms and ranches.	6.1, 6.2
Land that the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	No effect anticipated. There is no known irrigation within the Corridor, and landowners have not expressed concerns related to economically suitable irrigation on their land.	N/A
Surface drainage patterns and groundwater flow patterns	No effects anticipated. Temporarily disturbed areas will be reclaimed at the conclusion of construction activities and returned to previously existing contours and conditions to the extent possible.	6.11, 6.12
The impact upon:		
Sound-sensitive land uses	Temporary effects are anticipated to be minimal and be primarily limited to construction activities that may be audible to homes in the vicinity of the Corridor. Construction equipment will be equipped with sound baffling devices (mufflers), and construction activities will be restricted to	6.5

69-06-08-02(3) Selection Criteria	Potential Effects	Application Section
	daytime hours in accordance with any local ordinances. Following construction, there will be a negligible amount of sound from the Project as a result of corona effects, which occur when air molecules near energized conductors are ionized due to changes in the electric field intensity at the conductor surface. The sound is usually less than the sound of the ambient environment at the edge of the right-of-way during dry conditions but more noticeable during conditions of high humidity (fog, rain).	
Visual effect on the adjacent area	Minimal impacts are anticipated. Although the Project will be visible to landowners and travelers along roadways, existing energy infrastructure already exists within the Study Area. The Project Structures will utilize Corten steel (i.e., self-weathering steel) to have a dark brown matte finish to minimize sunlight reflections that could be visible to nearby landowners and commuters using nearby roadways.	6.6
Extractive and storage resources	No effects anticipated. There is one sand/gravel pit located within the Corridor, and the Applicants have coordinated with the landowner to avoid impacts to current and future operations.	6.2
Wetlands, woodlands, and wooded areas	Minimal temporary and permanent impacts are anticipated. Approximately 0.1 acre of wetlands will be permanently impacted, and up to approximately 51.5 acres of wetlands may be temporarily impacted during construction activities. Wetland resources will be avoided to the extent practicable including siting structures and access roads outside of delineated wetlands. The Project will avoid direct impacts to wetlands on U.S. Fish and Wildlife Service (USFWS) easements. Trees/shrubs will be inventoried and replaced consistent with the Commission's Tree and Shrub Mitigation Specifications.	6.12, 6.13
Radio and television reception and other communication or electronic control facilities	No effects anticipated.	6.3
Human health and safety	No effects anticipated. The Project will adhere to industry standards that meet or exceed the National Electrical Safety Code and comply with Occupational Safety and Health Administration regulations. Regular safety meetings will be held with contractors during construction and regular maintenance and inspections will be performed during the life of the Project to ensure its continued integrity.	6.4

69-06-08-02(3) Selection Criteria	Potential Effects	Application Section
Animal health and safety	No effects anticipated to livestock. Construction will be coordinated with landowners to avoid adverse impacts to livestock. Minimal impacts may occur to raptors, waterfowl, and migrating birds by the construction and placement of the structures, conductors and shield wires. Mammals and ground-based animals including birds such as sharp-tailed grouse may be affected by temporary construction from noise and habitat disturbances and the permanent placement of structures. The Applicants have been coordinating with USFWS and North Dakota Game and Fish Department (NDGFD) to identify the appropriate mitigation measures to avoid or minimize impacts to animal health and safety.	6.14, 6.15, 7.3
Plant life	Minimal temporary and permanent impacts are anticipated. The Corridor is a mixture of cultivated cropland and hay/pastureland, unbroken grasslands, and wetlands. Temporarily disturbed areas will be restored to the extent practicable. The placement of structures will permanently impact 0.9 acre and the Jamestown substation expansion will permanently impact 4.4 acres, totaling 5.3 acres of permanent impacts.	6.2, 6.13, 6.14, 6.15

3.5 Policy criteria

In accordance with NDAC Section 69-06-08-02(4), Table 3.5-1. The below table summarizes the Commission's policy criteria and the Applicants' intended practices to comply with this criterion along with the potential benefits that result from these practices. NDAC Section 69-06-08-02(4) states that the Commission may give preference to an applicant that will maximize interstate benefits.

Table 3.5-1. Applicant policies and commitments to limiting environmental impacts

69-06-08-02(4) Policy Criteria	Suitable Policy or Practice and Potential Benefits	Application Section
Location and design	The Applicants have sited the Project to minimize environmental and landowner impacts in coordination with landowners and agencies and have utilized other existing corridors including roadways, parcel and section lines, property lines, and land features that are compatible where practical. Engineering design utilizes the latest technologies and standards to maximize reliability and safety.	3.0, 4.0, 9.0
Training and utilization of available labor in this state for the general and specialized skills required	The Applicants anticipate utilizing local labor and contractors during construction to the extent they are available and qualified.	6.1, 9.7

69-06-08-02(4) Policy Criteria	Suitable Policy or Practice and Potential Benefits	Application Section
Economies of construction and operation	The Applicants anticipate utilizing local labor and contractors during construction to the extent they are available and qualified.	6.1, 9.7
Use of citizen coordinating committees	The Applicants have and will continue to work with landowners, stakeholders and local government units during the development and construction of the Project. The Applicants will have ongoing communications with landowners when maintenance activities are performed.	4.3, 7.0
Labor relations	No labor relations will be adversely affected. The Applicants anticipate utilizing local labor and contractors to the extent that they are available and qualified.	6.1, 9.7
Coordination of facilities	The Applicants have coordinated with owners of existing and known projects regarding infrastructure placement. The location of existing facilities was considered in determining the location of the Corridor such that the continued operation of existing facilities will be unaffected by the Project.	4.1, 9.8
Monitoring of impacts	The Applicants will employ Best Management Practices (BMPs) during construction to minimize environmental impacts in compliance with all applicable federal, state and local requirements.	6.16, 9.11
Utilizing existing and proposed ROW and corridors	The Applicants have considered maximizing use of existing and proposed ROW and corridors to the extent practicable. The proposed Route is the result of balancing several factors including requirements of the NDCC and NDAC, feedback from landowners and stakeholders, input from agencies, engineering design limitations, and utilization of proposed ROW and corridors among other things.	3.0, 4.0
Other existing or proposed transmission facilities	The Applicants have considered other existing or proposed transmission corridors to the extent practicable. The proposed Route is the result of balancing several factors including requirements of the NDCC and NDAC, feedback from landowners and stakeholders, input from agencies, engineering design limitations, and utilization of other existing or proposed transmission facilities.	3.0, 4.1, 9.8

The Project will be sited in such a manner as to minimize impacts on agriculture, extractable resources, health and safety, plant and animal life, communications, and the visual effect on the surrounding area in coordination with agencies, landowners and other interested stakeholders. The Applicants are committed to comply with applicable federal, state, and local laws.

3.6 Design and construction limitations

Pursuant to NDAC Section 69-06-05-01(2)(k), the proposed location of the Project minimizes impacts on the exclusion, avoidance, selection, and policy criteria areas identified in NDAC Section 69-06-08-02.

To minimize temporary and permanent impacts, design features were identified during routing and siting of the Project, including using steel monopoles and siting structures away from environmentally sensitive areas. Steel monopoles were selected to minimize the physical footprint of the structure. Minimizing the footprint was considered a design priority to reduce the ground disturbance for environmental considerations and to minimize the effects on local farmers. The impacts to farmers will be minimized with less structures to farm around and long enough spans that large equipment, such as sprayers, can freely move underneath them. Most wetland impacts within the Corridor will be avoided through careful design of structure placement. The Applicants will avoid wetlands to the extent possible; however, where jurisdictional wetland impacts are unavoidable, the Project will follow permit conditions as required by the United States Army Corps of Engineers (USACE). Impacts to wetlands within USFWS wetland easements will be avoided; no structures, temporary access roads, or temporary work areas will be sited within a wetland on any USFWS wetland easement areas. The Applicants also coordinated with North Dakota Game and Fish Department (NDGFD) as well as North Dakota State Historic Preservation Office (NDSHPO) on avoiding or minimizing potential impacts to special interest areas and features.

Following geotechnical exploration, it may become necessary to utilize alternative foundation types or structures in specific areas to avoid sensitive environmental features or a different construction methodology may be required such as a specific foundation design to accommodate soil features or other design limitations. If a special structure or specific foundation is needed in an environmentally sensitive area such as a USFWS wetland easement, the USFWS will be consulted.

3.7 Routing considerations

A multi-faceted approach was utilized by the Applicants beginning in early 2023 with the Project's Initial Routing Study Area (Appendix A, Figure 3.7-1) based on the two substation terminus points: the Jamestown Substation to the north of the City of Jamestown, owned by OTP, and the Ellendale 345-kV Trans Substation to the west of the City of Ellendale[10], owned by Montana-Dakota. To identify exclusion and avoidance areas, as well as additional data considered for selection and policy factors, a comprehensive data collection process to gather relevant information for route selection was then conducted. Information collected included publicly available federal, state, and local agency data; stakeholder data; data provided directly to the Project team by agencies; aerial imagery; and information collected during multiple on-site field surveys. A complete list and reference for each data set is available in the Geographic Information System (GIS) References Section 11.1. Types of information collected included:

[10] The City of Ellendale municipal city limits were to the west of the terminus point in 2023; however, property was annexed by the City of Ellendale in January 2025 which included an area around the Ellendale 345-kV Trans Substation.

- Manual digitization of homes and non-residential buildings/structures;
- Habitat features such as eagle and raptor stick nest locations, unbroken grasslands, and potential threatened and endangered species habitat;
- Federal lands and easements;
- State lands and easements;
- Local lands and easements;
- Community features such as churches, schools, fire stations, and hospitals;
- Manual digitization of center pivot irrigation systems;
- Cemeteries and not-publicly available cultural site information as obtained through the North Dakota State Historic Preservation Office (NDSHPO);
- Existing infrastructure including roads, communication towers, wind turbines, transmission lines, airports, railroads, gravel pits, and landfills; and,
- Open water and wetland features.

Spatial data was either imported into the Project spatial database (ArcGIS) or digitized from aerial imagery. As individual studies for the Project progressed, data continued to be collected and refined (e.g., collecting updated data sets and identifying more accurate locations of existing transmission lines with structure locations and incorporating the results from field surveys).

Exclusion and avoidance data as identified above was loaded into ArcGIS and reviewed in the Initial Routing Study Area (Appendix A, Figure 3.7-2). As refinement of the Project progressed and following the first Open House meeting, data was continuously collected and applied to GIS (Appendix A, Figure 3.7-3). The Initial Project Study Area was refined to an Initial Routing Corridor (Appendix A, Figure 3.7-4). The Applicants also considered routing opportunities based on land use and landowners' comments about potential effects to agricultural practices. To avoid fragmenting agricultural fields, county and township roads, section lines, and half-section lines were used for locating potential Route segments. In addition to considering section lines and half-section lines, Route segments paralleling existing HVTLs and major highways were added to routing consideration. After assessing all of the information gathered, the Applicants presented proposed and alternative routes to the public at open house meetings held in September 2023 (Appendix A, Figure 3.7-5).

Micro-siting, or the process for determining where exactly the Route should go within the Corridor, considerations included:

- Landowner preferences within agricultural lands;
- Landowner easement negotiations;
- Township, county, state and federal roadway setback requirements;
- Proximity to occupied residences and buildings;
- Coordination with other construction projects that may be occurring in the area;
- Engineering feasibility for crossing existing roads, railroads, highways, and transmission lines;
- Need for and constructability of temporary and permanent access roads;

- Any necessary adjustments needed based on results from cultural/Tribal and biological field surveys in 2024 (and ongoing as needed for areas where access has not yet been granted).

During the micro-siting and landowner easement acquisition process, several alignment shifts have occurred since the September 2023 Open House meetings. Additionally, several significant route shifts have occurred to accommodate landowner and stakeholder requests. Details of the route alternatives considered and removed from consideration during this process are included in Appendix C. Additional information gathered up to the start of construction may result in the shifting of structures within the Corridor. If changes to structure locations occur within the Corridor, the Applicants will notify the Commission.

4.0 Design

4.1 Design and associated facility

The Route proposed in this Application is located in Stutsman, LaMoure, and Dickey Counties and will consist of approximately 92 miles of new, double circuit, 345-kV transmission line from OTP's existing Jamestown Substation near Jamestown, North Dakota, to Montana-Dakota's existing Ellendale 345-kV Trans Substation near Ellendale, North Dakota. The transmission line is planned to initially be constructed with one circuit, one optical ground wire, and one overhead ground wire. A second, 345-kV circuit will be installed in the future, when the need arises. The Applicants commit to provide subsequent notice to the Commission when they plan on installing the second 345-kV circuit in the future.

4.1.1 Engineering considerations

Several engineering considerations are being implemented into the design of the Project, including but not limited to the following:

- A majority of the structure types will be monopoles anchored on a single, drilled, pier foundation to minimize the structure's footprint to limit environmental and landowner disturbances;
- Structures will be made of weathering steel to minimize visual impacts and glare to landowners and wildlife;
- Conductor cable will be bundled to increase line performance with generally reduced losses, corona, and Electric and Magnetic Fields (EMF);
- Conductor cable will be twisted-pair (TP) conductor to reduce possible galloping effects and aeolian vibration.

4.1.2 Transmission structures and ROW design

The Project will consist of approximately 92 miles of transmission line with a 150-foot-wide ROW. The transmission structures will be generally centered within the ROW.

As mentioned previously, the transmission line design selected for the Project will be a double circuit, 345-kV transmission facility that will be constructed on steel monopole structures. For most structures, each circuit of the transmission line will consist of three-phase conductors hung vertically from insulators attached to davit arms on each side of the monopole structure. Each phase will have two conductor bundles with 18-inch vertical spacing. Specialty structures are anticipated at two existing HVTL crossings and near the substations to meet clearance and safety requirements. Examples of the dominant structure configurations are provided in Appendix D. Although changes to structure configurations are not anticipated, they are subject to alteration based on final engineering.

The phase conductors are expected to be TP, 636 ACSR "Grosbeak." TP conductors consist of two sub-conductor pairs twisted at a predefined distance by the manufacturer. This type of conductor provides motion resistance to wind-induced events on transmission lines (e.g., conductor galloping or vibration). Each phase will consist of two of these TP conductors to provide optimal current carrying capacity.

The communication line proposed for the Project with the initial installation of the single circuit is expected to be an Optical Ground Wire (OPGW). OPGW is a fiber-optic cable with a designated set of fibers surrounded by steel wires that serve a dual purpose at the top of each structure: (1) to protect the phases from lightning strikes; and (2) to exchange information (i.e., communicate) between the endpoint substations and other locations on the transmission system. Where there is insufficient overhead clearance between the OPGW and other existing HVTLs, the OPGW will need to be buried within the Corridor. Based on current design, it is anticipated that the OPGW will need to be buried at two locations along the Route and potentially at the two substation endpoints. These locations are subject to final engineering refinement.

The Project is expected to require approximately 502 transmission structures with spans primarily ranging from 200 to 1,400 feet (1,000 feet average), as presented in Table 4.1-1 below, which will vary depending on geological, environmental, or engineering constraints identified during surveying, permitting, and final engineering designs. A majority of the structures are anticipated to be approximately 120 to 180 feet tall and will be bolted to concrete drilled pier foundations embedded in the ground. Foundation sizes vary generally from 7 to 14 feet in diameter and from approximately 25 to 80 feet in depth. Additional specialty structures such as H-frame or three-pole structures may be used where unique features are encountered along the Route, such as at substation tie-ins. Structure locations as proposed and depicted in the figures within Appendix A are subject to refinement depending on final engineering and constructability reviews.

Table 4.1-1. Project configuration summary

Line Type	Structure Type	Structure Material	Structure Height	Foundation Diameter (feet)	Foundation Depth (feet)	Spans
345 kV Double-Circuit Tangent, Standard	Monopole with Davit Arms	Corten (weathered) Steel	100 to 180	8 to 9	25 to 45	400 to 1,400
345 kV Double-Circuit Running Angle	Monopole with Davit Arms	Corten (weathered) Steel	120-170	9 to 11	28 to 50	400 to 1,200
345 kV Double-Circuit Dead-end, Standard	Monopole with Davit Arms	Corten (weathered) Steel	90 to 140	12 to 14	50 to 80	200 to 1,200
345 kV Double-Circuit Crossing Tangent	Monopole with Davit Arms	Corten (weathered) Steel	90 to 160	9 to 10	28 to 50	400 to 1,200
345 kV Double-Circuit Crossing Dead-end	Monopole with Davit Arms	Corten (weathered) Steel	90 to 160	12 to 14	50 to 80	400 to 1,200

Line Type	Structure Type	Structure Material	Structure Height	Foundation Diameter (feet)	Foundation Depth (feet)	Spans
345 kV Single-Circuit Crossing Dead-end, Mono-Pole*	Monopole with Davit Arms	Corten (weathered) Steel	50 to 90	7 to 9	25 to 45	200 to 1,000
345 kV Single-Circuit Vertical Dead-end, Mono-Pole*	Monopole	Corten (weathered) Steel	90 to 130	8 to 10	28 to 50	200 to 1,000

*These structures are currently only planned at substations and existing HVTL crossings

4.1.3 Associated facilities

The Project will include modifications to both the Jamestown substation and the Ellendale 345-kV Trans Substation. The Jamestown substation modifications will include an expansion.

The modifications and expansion of the existing Jamestown Substation will be to change the existing ring bus configuration to a breaker and half configuration by adding one new row of bus work and breaker positions to the 345-kV portion of the substation. This work will accommodate a new termination position and associated reactive equipment, along with adequate space for future interconnections (all within OTP-owned property). The expansion of the substation will be to the north of the existing substation and will require that an existing microwave tower be relocated. The current fenced area of the Jamestown Substation will be expanded on OTP property by approximately 4.4 acres permanently (see Appendix A, Figure 4.1-1).

The modifications of the existing Ellendale 345-kV Trans Substation will all occur within the existing fenced area of the substation and will focus on changing the existing 345-kV portion of the substation from a ring bus configuration to breaker and a half configuration to accommodate the Project. The equipment required for the modifications will include new termination structures, circuit breakers, switches, bus work, multiple steel supports, conduits, control cable, expanded equipment enclosure, relays, and associated control equipment. The current fenced area of the Ellendale 345-kV Trans Substation will not be expanded for the addition of the Project.

4.1.4 Project access and temporary use areas

The transmission line construction process will include the following temporary use areas that will be reclaimed to original contours and land use following construction (reclamation is discussed further in Section 5.2.1), unless the landowner requests otherwise:

- Each transmission structure will require a temporary workspace or work pad of approximately 150 feet by 200 feet per structure (0.7 acres) to facilitate construction and ingress/egress of construction equipment.

- Temporary pulling/tensioning sites and stringing areas will be required to facilitate conductor installation onto the transmission structures. The Applicants will determine appropriate locations of pulling/tensioning sites and coordinate with landowners as needed to acquire temporary land rights during construction. At highway crossings and existing HVTL crossings, additional space for guard structures may be acquired to prevent the conductor from sagging or falling onto underlying conductor or roadways.

- Temporary access roads to the structures will be required to enable foundation installation, structure assembly and erection, conductor, and OPGW and OHGW installation. Access will consist of approximately 30-foot-wide temporary roads extending between structures within the Corridor which are expected to result in approximately 234 acres of temporary disturbances. To prevent rutting and avoid compaction of sensitive vegetation, and as otherwise determined necessary by the contractor, temporary mats may be installed to facilitate equipment travel on temporary access roads where soil and vegetation sensitivities are identified.

The final locations of these temporary use areas are dependent upon final engineering, permitting, and easement acquisition discussions. All necessary land rights and applicable permits will be secured prior to use of temporary areas.

4.1.5 Project impact assumptions

Permanent impacts are those required for Project operation, consisting mostly of individual transmission structure foundation locations. Temporary impacts are those impacts that result during construction from the presence of construction equipment and associated activities within the Corridor. Table 4.1-2 summarizes the estimated temporary and permanent impacts associated with permanent infrastructure to be constructed within the Corridor.

Table 4.1-2. Estimated temporary and permanent corridor infrastructure impacts

Corridor Infrastructure Impacts	Disturbance Assumptions	Temporary Impact (acres)	Permanent Impact (acres)
Transmission structures, 502 in total assumed	Temporary: 150 feet x 200 feet = 30,000 square feet = 0.69 acres.	345.6	0.9
	Permanent: 10 feet diameter = 78.54 square feet= 0.002 acres.		
Jamestown Substation expansion	4.4 acres	4.4	4.4
Ellendale 345-kV Trans Substation modifications	0.0 acres	0.0	0.0

4.2 Local and state setbacks

State and local setbacks along the Route are identified below in Table 4.2-1.

Table 4.2-1. Setback distances

Setback Type	Distance
Residence, school, or place of business[1]	500 feet[2]
Inhabited rural residences – Corwin Township and Homer Township	2,640 feet[3]
The geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility. 1,200 feet	1,200 feet[4]
Areas on either side of a direct line between ICBM launch or launch control facilities to avoid microwave interference.	30 feet[4]
Section lines	33 feet[5]

1. These setback distances were measured from the closest edge of any occupied residence, school, or place of business to any part of the transmission line structure or conductor wire at a steady state in everyday conditions
2. Per NDCC 49-22-05.1(3) and NDAC 69-06-08-02(2)(e), the setback may be waived in writing by the owner (see Appendix B).
3. Setbacks are automatically preempted by the NDPSC under NDCC 49-22-16(2)(b). See Section 7.5 for additional discussion regarding Applicants' preemption request.
4. The nearest ICBM launch or launch control facility is approximately 98 miles away.
5. NDCC 24-07-03.

4.3 ROW and land acquisition

The Project will require the acquisition of easements to cross private property and coordination with appropriate agencies where the Project crosses the ROW of other existing public utilities or public roads. There are 283 parcels and 162 private landowners within the Corridor. The Applicants are in the process of securing option agreements with those landowners which began in February 2023. Land Agents have been and will continue to work with the landowners to answer questions about the Project and schedule of activities on their properties. As engineering is finalized, land rights agents will continue to keep the landowners of the properties involved. All necessary land rights and easements will be secured for properties within the Corridor and for temporary access areas prior to construction beginning on them.

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5.0 Construction and operation

5.1 Pre-construction and ROW preparation

Prior to ground disturbance activities, landowners will be contacted regarding the schedule and sequencing of activities. Initial survey work including survey control, Route centerline location, profile surveys, access surveys, and geotechnical investigations (soil borings) will occur prior to construction. Additionally, in preparation of construction, the ROW will be cleared of vegetation as necessary to construct, operate, and maintain the Project per the requirements outlined in the North American Electric Reliability Corporation (NERC) reliability standards.

Clear cutting (including the removal of all trees, brush, and other low-growing vegetation) will exceed the 50-foot-wide tree and shrub clearance limitation in the Tree and Shrub Mitigation Specifications established by the Commission. As a result, the Applicants request a modification of the 50-foot clearance limitation as part of this Application. Clearance will occur within the 150-foot ROW as necessary for safety, access, and maintenance. Trees that could present a danger to the safe operation of the Project will be removed or pruned to address safety standards. This may include trees outside of the ROW that could hit the transmission line should they fall. Disposal of timber, treetops, limbs, and slash will comply with state and local ordinances and the desires of landowners.

5.2 Construction

The transmission line alignment and structure locations were selected to minimize site leveling and grading. Grading within the Corridor at transmission structure work pads, pulling and tensioning sites, and access roads will only occur if it is necessary to provide a reasonably level area for construction crews and equipment, such as auger trucks (lo-drill), cranes, and other installation vehicles (e.g., bucket trucks) to allow the safe operation of the equipment. If blading is required, it will be confined to the Project Corridor and will be accomplished using equipment such as graders, bulldozers, or front-end loaders. Soil will be stockpiled and topsoil segregated for reuse during reclamation. If temporary removal or relocation of gates or fences are necessary, installation of temporary or permanent fences and gates will be coordinated with the landowner at the Applicant's expense. Work pads and other temporary disturbance areas will be re-graded to existing contours and re-vegetated as discussed in the following reclamation section.

Once the ROW has been prepared for construction, stormwater controls and any necessary fencing for environmentally or culturally sensitive areas will be installed. Temporary signage and flagging will be placed to direct construction crews to things such as site boundaries, structure identifications, cadastral monuments, avoidance features, etc. The Applicants will also employ standard construction and mitigation practices that have been developed from experience as well as industry specific BMPs throughout all phases of construction and reclamation. Winter construction may be necessary, notably in areas where frozen ground conditions will minimize impacts to wetlands, sensitive soils, and vegetation. Winter construction may also provide, in certain inundated areas,

safer access because frozen ground will provide a more solid surface to work on and reduce potential for vehicles to get stuck. Care will be taken to protect topsoil from mixing with subsoil by utilizing BMPs such as segregation of topsoil from spoils with vegetative buffers and straw wattles. The Applicants are requesting approval by the Commission to complete topsoil removal in winter, if necessary.

Structure foundation holes will be drilled using a tracked vehicle equipped with lo-drill. The size of the foundation will vary based on the final engineering and site-specific soil conditions and is anticipated to range from 25-80 feet deep and 7-14 feet in diameter. The concrete drilled pier foundations will be reinforced with steel rebar cages that will be built on site or transported to the structure work pad. Concrete will be delivered to the structure site by concrete ready-mix trucks and after being poured, will cure for a minimum of three weeks depending on the construction schedule and procurement timing. Concrete washout areas will follow application regulations and will not be placed in wetlands or aquatically sensitive areas.

Structure components (i.e., steel segments that comprise portions of the entire structure, davit arms, hardware, insulators, and related materials) will be trucked to structure work site locations from temporary material and laydown storage yards and assembled at the work pads. Davit arms, insulators, and other appurtenances will be attached to the structure while on the ground at each structure location within the Project Corridor. The assembled structure will be erected using a crane onto the concrete foundation and bolted on to the embedded anchor bolts.

After structures have been erected, stringing blocks, or dollies, will be temporarily placed at the ends of the insulators to string conductor using bucket trucks or helicopters. Conductor will be placed at temporary pulling/tensioning sites and stringing setup areas to control tension for safety purposes. Stringing equipment generally consists of wire pullers, tensioners, conductor reels, shield wire reels, and stringing blocks. Stringing consists of pulling lightweight cables or ropes through the dollies that then pulls the conductor through under sufficient tension to keep the conductor from coming into contact with the ground. Temporary guard or clearance poles will be installed over existing distribution or communication lines, streets, roads, highways, railways, or other obstructions after any necessary notifications are made and/or permits are obtained. This ensures that conductors will not obstruct traffic or come into contact with existing energized conductors or other cables and protects the conductors from damage. Once a reel or section of line has been installed, the conductor will need to be spliced with the next reel of conductor and the operation continues until a section of line is complete. Once the conductor sag is verified, the temporary dollies are removed, and the conductor is clipped into the insulators. The Project will utilize compression splices to join conductor segments together. These splices are anticipated to occur on average every 7,000 feet along the alignment of the Route. The process will be repeated until all the conductor and shield wire is strung.

Debris associated with HVTL construction may include construction materials such as packaging material, insulator crates, conductor reels, and wrapping. This debris may also include excess excavated soil and removed vegetation. Materials with salvage value, including conductor reels, unused conductor and hardware, structures, and other materials, will be removed from the site for reuse. Stored topsoil will be spread over

disturbed soils during the reclamation process. Solid waste will be temporarily stored within the ROW or material laydown yards and then transported to appropriate disposal facilities. Debris will be disposed of in accordance with local, state, and federal regulations.

The Contractor will be required to follow applicable environmental commitments during construction. Training will be provided to construction personnel on BMPs and overall compliance expectations. The Applicants will obtain a compliance inspector who will be on-site to inspect and document compliance with environmental commitments of the Project.

5.2.1 Reclamation

Following the completion of construction, disturbed areas will be reclaimed, fertilized, and reseeded according to Natural Resources Conservation Service (NRCS) recommendations, unless otherwise specified by the specific landowner and approved by the Commission. Reclamation will proceed following guidance and final stabilization requirements of the North Dakota Department of Environmental Quality (NDDEQ) North Dakota Pollutant Discharge Elimination System (NDPDES) construction stormwater permit NDR11-0000 (NDDEQ 2020).

Unless otherwise agreed to by the landowner, all construction materials and debris will be removed from the site once construction is complete. Post-construction reclamation activities also include employing appropriate erosion control measures, and reseeding or otherwise stabilizing areas disturbed by construction. Trees and shrubs will be replaced consistent with the Commission's Tree and Shrub Mitigation Specifications that will be included in the Applicants Tree and Shrub Mitigation Plan.

5.3 Operation and maintenance

Once the Project is operational, access to the Project ROW is required periodically to perform inspections, conduct maintenance, and repair damage. Regular maintenance and inspections will be performed during the life of the Project to ensure it continues to provide safe and reliable performance. The Applicants will perform maintenance of the Project in compliance with the applicable reliability standards established by NERC. Generally, the Applicants inspect the transmission lines at least once per year. Inspections are typically limited to the immediate Project ROW and pre-determined access points. If concerns or problems are found during inspections, repairs will be performed and relevant landowners and agencies will be notified, if necessary.

The Project ROW will be managed to remove trees and vegetation that interfere with the safe and reliable operation of the transmission line. ROW clearing practices include a combination of mechanical and hand clearing, and may include the application of herbicides, where allowed, to remove or control vegetation and weed growth. A Vegetation Management Plan has been developed to identify and establish procedures to

limit the introduction and spread of noxious and invasive weeds during construction and ongoing operations. It is included as Appendix F to this Application.

The Jamestown and Ellendale 345-kV Trans Substations will be visually inspected to verify that the physical equipment and fence have not been damaged, the gravel is free of weeds and washouts, and the premises is free from trash. Equipment testing will also be done in accordance with the NERC reliability standards. If any damage or concerns are identified during inspections or testing, repairs or equipment replacements will be performed, as needed.

6.0 Environmental analysis

This section describes the existing conditions within the Corridor. The existing conditions are the baseline conditions that may be affected by the Project. This section discusses the potential direct environmental impacts of the Project. Potential indirect impacts are identified in the resource discussions where applicable. Measures to avoid, minimize, or mitigate impacts are discussed where appropriate.

The Applicants will maintain compliance and operate in an environmentally proactive manner, while taking into consideration the cost to customers.

Montana-Dakota has an overarching Environmental Policy that supports and provides direction on environmental compliance. The policy states: "The Company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Montana-Dakota's environmental goals are to 1) minimize waste and maximize resources; 2) to be a good steward of the environment while providing high quality and reasonably priced products and services; and 3) to comply with or surpass all applicable environmental laws, regulations and permit requirements. Montana-Dakota also has directives and/or procedures for other environmental compliance areas including, but not limited to, water discharge and infrastructure permitting, hazardous materials transportation, hazardous materials management and disposal, and spill response and remediation.

Otter Tail's commitment to environmental responsibility is central to their mission statement, which is: "To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the areas in which we do business." In July 2024, Otter Tail published its eleventh sustainability report, which can be accessed at www.otpsustainability.com. As detailed in the report, the Company is committed to focusing on environmental responsibility and reducing environmental impact across operations.

Both Montana-Dakota and Otter Tail have complied in the past and will continue to comply with all requirements of the Commission or any other regulatory authority in siting, operating, and maintaining energy conversion and transmission facilities located in North Dakota and all throughout their respective service territories.

6.1 Socioeconomics

6.1.1 Description of resources

The Study Area is located within a sparsely populated, rural area in southeastern North Dakota. The Corridor crosses Fried, Rose, Bloom, Spiritwood, Homer, Winfield, Corwin, and Montpelier Townships in Stutsman County; Adrian, Russell, Wano, and Willowbank Townships in LaMoure County; and Valley, Keystone, Elden, and Ellendale Townships in Dickey County. The largest city located near the Study Area is Jamestown, approximately 5.8 miles to the south of the Jamestown Substation, with Jamestown city limits approximately 2.4 miles west from the Route. The city of Jamestown had a 2020 population of 15,583 (United States Census Bureau [USCB] 2020a). The next largest city

is Ellendale, whose municipal limits are crossed by the Project, with a 2020 population of 1,125 (USCB 2020b). The third largest city near the Study Area is Edgeley, located approximately 4.5 miles west of the Route, with a 2020 population of 585 (USCB 2020c). The Corridor does not pass through areas with minority populations higher than state average (United States Environmental Protection Agency (USEPA). 2024, USCB 2023).

Residences are widely distributed in the area but are typically located near rural roads running along section lines. In general, residence density is higher surrounding the cities of Jamestown and Ellendale.

According to NDAC 69-06-08-02, the routing of a transmission facility must be 500 feet or greater from an occupied residence, school, or place of business (NDCC Section 49-22-05.1 and NDAC 69-06-08-02(2)(e)). As previously discussed, there is one occupied residence within 500 feet of the transmission line facility. Per N.D.C.C. 49-22-05.1(2), a residence setback may be waived in writing by the owner of the residence (see Appendix B).

6.1.1.1 Stutsman County

Stutsman County had an estimated population of 21,392 in 2023. The median household income in the County is $59,167, which is 20 percent lower than the statewide average of $73,959. The percentage of persons below the poverty level is 10.9 percent, which is 0.6 percent lower than the statewide average of 11.5 percent (USCB 2023). According to the 2022 American Community Survey 5-year estimate, the leading industry for employment in Stutsman County was educational services, followed by health care and social assistance (USCB 2022).

6.1.1.2 LaMoure County

LaMoure County had an estimated population of 4,096 in 2023 (USCB 2023). The median household income in the County is $70,227, which is slightly lower than the statewide average of $73,959. The percentage of persons below the poverty level is 9.9 percent, which is below the statewide average of 11.5 percent (USCB 2020a). According to the 2022 American Community Survey 5-year estimate, the leading industry for employment in the county was educational services, followed by health care and social assistance (USCB 2022).

6.1.1.3 Dickey County

Dickey County had an estimated population of 4,999 in 2023. The median household income in the County is $60,250, which is less than the statewide average of $73,959. The percentage of persons below the poverty level is 12.8 percent, which is higher than the statewide average of 11.5 percent (USCB 2023). According to the 2022 American Community Survey 5-year estimate, the leading industry for employment in the county was educational services, followed by health care and social assistance (USCB 2022).

6.1.1.4 Agriculture and farming

Agriculture is the primary land-based economic resource in the Corridor and Study Area. Much of the agricultural land is designated as prime farmland by the United States

Department of Agriculture (USDA), indicating that the land is of the highest quality for agricultural production. Federal regulations define prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses" (7 Code of Federal Regulations [CFR] 657.5(a)(1)). Prime farmland soils are discussed in Section 6.9. Top agricultural products for North Dakota include grains, oilseeds, dry beans, dry peas, cattle and calves (USDA 2022a). Within the Study Area, corn, soybeans, wheat, sunflowers, barley, and edible beans are commonly grown agricultural products.

According to the North Dakota 2022 Agricultural Statistics published by the USDA, there are an estimated 25,068 farms in North Dakota and the state ranks 18th in market value of agricultural products sold (USDA 2022a). Within the State of North Dakota, Stutsman County ranks 6th in market value of agricultural products sold, has 829 farms averaging 1,449 acres in size with 77 percent of farmland used for cropland, 16 percent for pastureland, 3 percent woodland, and 4 percent for other purposes (USDA 2022d). LaMoure County, which ranks 14th in market value of agricultural products sold, has 543 farms averaging 1,285 acres in size with 87 percent used for cropland, 1 percent for pastureland, and 3 percent for other purposes (USDA 2022c). Dickey County ranks 15th among counties in market value of agricultural products sold and has 423 farms averaging 1,443 acres in size with 80 percent of farmland used for cropland, 15 percent for pastureland, and 5 percent for other purposes (USDA 2022b).

In 2022, Stutsman County sold $420 million in agricultural products (87% crops and 13% livestock). Soybeans and corn are the most widely grown crops in Stutsman County. Cattle is the primary livestock inventory in the county (10th out of the 53 counties). Stutsman County was also ranked 2nd in the state for production of milk from cows (USDA 2022d).

In 2022, LaMoure County sold $299 million in agricultural products (90% crops and 10% livestock). Soybeans and corn are the most widely grown crops in LaMoure County. Cattle is the primary livestock inventory in the county (26th out of the 53 counties). LaMoure County was also ranked 9th in the state in hog production and 3rd for poultry and egg production (USDA 2022c).

In 2022, Dickey County sold $270 million in agricultural products (85% in crops and 15% in livestock). Soybeans and corn are the most widely grown crops in Dickey County. Cattle is the primary livestock inventory in the county (16th out of the 53 counties). Dickey County was also ranked 7th in the state in hog production and 2nd for poultry and egg production (USDA 2022b).

6.1.1.5 Tourism

The Applicants reviewed potential tourism activities located within the Corridor along with resources within the vicinity that may be indirectly impacted by the Project because of viewshed effects or alteration of the landscape. There are no major tourism resources within the Corridor. Pheasant and waterfowl hunting is a popular recreational activity in the Study Area that may draw a small number of visitors to the Study Area temporarily and seasonally; hunting may occur on private lands within the Corridor. State and federal managed lands are present within the Corridor and there are several National Wildlife Refuges (NWR) within close proximity to the Corridor, including the Maple River NWR

approximately 6.1 miles east of the Route, Arrowhead NWR approximately 8.7 miles northwest, Bone Hill NWR approximately 10.3 miles west, and Dakota Lake NWR approximately 18.6 miles east. The cities of Jamestown and Ellendale contain tourist activities such as museums, courthouses, art and music venues, and college sports.

6.1.2 Socioeconomic impacts/mitigation

6.1.2.1 Stutsman, LaMoure, and Dickey Counties

The Project will result in an overall positive impact to socioeconomics. Short-term impacts on residents and local business owners in the Corridor primarily will be related to temporary disruption caused by construction activities, such as elevated noise levels and increased construction-related vehicle traffic. Residents and local business owners near the Corridor may be affected by temporary construction activities and associated noise (see Noise impacts and mitigation in Section 6.5). Temporary visual impacts will be localized and short-term around the portion of the Route being actively constructed and permanent impacts will be minor (discussed more in Section 6.6).

The Project will have positive economic impacts for the local population, including easement payments for participating landowners, employment, and property and sales tax revenue. North Dakota State University (NDSU) conducted a study on the local economic impact of the Project over a six-year period (2023 – 2029). The economic assessment was based on construction-related expenditures for the acquisition of goods and services, payment for construction and related-labor, landowner easements, and project-related infrastructure. Using the IMPLAN modeling platform, NDSU found the economic effects are expected to be modest in the first two years of the Project but increase substantially during 2026 through 2028, while construction is occurring. The Project is estimated to support $94 million in labor income, $121 million in value-added economics/contributions to gross state product such as payments to capital and business taxes, and $238 million in total economic impact. The full report is attached as Appendix G.

Economic losses from farmland that is taken out of production for operation of the Project are anticipated to be minimal in comparison to the additional income provided by the Project. The Project is expected to provide $20.5 million in sales and property tax revenue and $10.7 million to participating landowners for easement payments. This is anticipated to lead to an increase in spending in the local economy, in addition to direct benefits to landowners receiving payments. Short-term economic benefits will be derived from activities associated with the construction of the Project, including employment during construction which will peak at approximately 510 direct and secondary jobs in 2027 with workers[11] who will spend earnings in the area around the Project. Circulation and recirculation of dollars paid out by the Applicants such as payroll, business expenditures, purchasing of equipment, supplies, fuel and energy, and state and local taxes will also generate additional income in surrounding areas. Additionally, temporarily relocating workers within the Project area will likely use lodging in and around the surrounding cities.

[11] Combination of wage/salary and self-employed workers

6.1.2.2 Agriculture and farming

Temporary and permanent impacts to agriculture and farming socioeconomics from the Project are anticipated to be negligible. The Project is not expected to affect the overall agricultural economies of Stutsman, LaMoure, or Dickey Counties.

Based on a review of structure types and locations relative to existing land use, approximately 604.8 acres of agriculture hay/pasture and cultivated cropland may be temporarily impacted during Project construction. Permanent crop land conversion associated with the Project will be approximately 4.5 acres. The Applicants will obtain an easement from each landowner whose property will be crossed by the Corridor which will include compensation from temporary and permanent agricultural production impacts. The easements allow the Applicants to locate the Route on the property and to enter the property for maintenance when needed. The landowner retains ownership and use of the land subject to the easement, which restricts certain activities within the easement to avoid compromising the safety of the landowner and reliability of the transmission line. Cultivated crops and hay/pasture areas surrounding transmission line structures will still be able to be farmed or pastured following construction of the Project.

The Applicants will work with landowners to minimize impacts on all farming and grazing operations within the Corridor. By aligning the Route along existing ROWs, roads, and section and field lines, impacts to the farming and grazing operations, as well as the mobility and maneuverability of field equipment have been minimized through routing and siting. The Applicants will compensate landowners for crop damage, soil compaction, or damages that may occur during construction. Fences, gates and drain tiles, if damaged, will be repaired by the Applicants. Areas disturbed during construction will be repaired and restored to preconstruction conditions to the extent possible.

6.1.2.3 Tourism

No temporary or permanent impacts on tourism resources are anticipated and therefore, no mitigation is proposed. There are no major sources of tourism in the Study Area and the Project will not affect tourism in Stutsman, LaMoure, or Dickey Counties and, therefore, no mitigation is proposed.

6.2 Land use

6.2.1 Description of resources

Land use in the Study Area is dominated by agricultural uses including cultivated cropland and hay/pasturelands for cattle grazing. Other land uses include aggregate mining (gravel pits), undeveloped herbaceous wetlands and plant life, and human developed infrastructure (United States Geological Survey [USGS] 2022). The urban areas located near the Project include the City of Jamestown, located approximately 2.4 miles from the Route, and the City of Ellendale, which is located within the Project Corridor. The City of Edgeley is located approximately 4.5 miles west from the Route.

6.2.1.1 Agriculture

Land use within the Corridor is primarily agriculture row crops (see Table 6.2-1; a more detailed table is in Section 6.13, Table 6.13-1). Commonly cultivated cropland within the Corridor includes corn, soybeans, wheat, sunflowers, barley, and edible beans. Cattle grazing and feeding operations are also found on rangeland and hay/pasturelands along the Route and within the Corridor. In general, land use within the Corridor is 86.0 percent agricultural; approximately 65.9 percent cultivated row crops and 20.1 percent hay/pastureland. Section 6.13 discusses vegetation cover types, which includes cultivated crops and hay/pastureland within the Corridor, in more detail.

Table 6.2-1. Land cover types within the Project Corridor

NLCD Land Cover Category	Acres	Percent of Corridor
Cultivated Crops	1,100.7	65.9
Hay/Pasture[1]	335.9	20.1
Wetlands[2]	92.5	5.5
Other Vegetation[3]	108.2	6.5
Developed Land[4]	32.8	2.0
Total	**1,670.2**	**100.0**

Source: USGS 2022a.

1. Unbroken grassland calculations are sourced from NDGFD unbroken grassland layer and are part of both the hay/pasture and herbaceous land cover categories (NDGFD 2022).
2. Wetlands include Land Use categories of: Emergent Herbaceous Wetlands; Open Water; and Woody Wetlands.
3. Other Vegetation includes Land Use categories of: Herbaceous; Deciduous Forest; Shrub/Scrub; and Barren Land.
4. Developed land includes Land Use categories of: Developed, Open Space; Developed, Low Intensity; Developed, Medium Intensity; and, Developed, High Intensity.

6.2.1.2 Existing infrastructure

Developed infrastructure within the Corridor, shown on Figure 6.2-1, includes federal, state, county, and township roads, railroads, and utility ROWs including distribution lines, HVTLs, and natural gas lines. Rural water lines may be present in the Study Area. There is one abandoned/unoccupied residence within the 150-foot Corridor[12] and one microwave/communication tower owned by Otter Tail Power within the Jamestown Substation expansion area (discussed further in Section 6.3, Communications). There are no occupied residences or any other buildings or structures within the 150-foot Corridor. Appendix A, Figure 6.2-1 displays the locations of known existing infrastructure within the Corridor and Study Area.

The Jamestown landfill, owned by the City of Jamestown, is within the Study Area but is located outside of the Corridor. Digital data centers are located immediately south of the Jamestown substation, and another is located immediately north of the Ellendale 345-kV Trans Substation within the Study Area but both locations are outside of the Corridor. There are several parks, cemeteries, churches, schools, fire stations, hospitals, and medical facilities in the vicinity of the Project, concentrated around small towns and the

[12] The Applicants have communicated with the landowner about this abandoned residence to confirm that it is abandoned and there are no plans for future occupation. The landowner has communicated that they plan to remove the structure prior to Project construction.

cities of Jamestown, Ellendale, and Edgeley, but none are located within the Corridor. In addition, there are no ICBM launch or launch control facilities in the Study Area and microwave interference is not anticipated (United States Air Force [USAF] 2024). The Spiritwood Energy Park, a 551-acre industrial park, and the Great River Energy-Spiritwood Station combined heat and power plant are located approximately 2.4 miles east of the Corridor.

6.2.1.3 Mining resources

Due to the glacial history of the landscape, sand and gravel resources are present throughout North Dakota. Consequently, there are North Dakota State Mineral Trust Lands in the Study Area, which are discussed in Section 6.2.1.5, State trust lands. There is one aggregate sand and gravel pit within the Corridor.

6.2.1.4 Conservation areas

There are 20 parcels containing USFWS wetland easements within the Project Corridor. The Corridor will not cross any State Parks, Nature Conservancy Lands, NRCS Easements, USFWS grassland easements, NDGFD Wildlife Management Areas (WMAs), National Forests, National Grasslands, NWRs, or Waterfowl Production Areas (WPAs).

There are two Aquatic Habitat Program (Save Our Lakes) easements through NDGFD within the Corridor. The purpose of these easements is to protect wetlands and water quality.

State and federal easement lands are shown on Figure 6.2-2 in Appendix A.

6.2.1.5 State trust lands

The North Dakota Department of Trust Lands (NDDTL), formerly known as the North Dakota State Land Department, manages the State Trust Lands and School Trust Lands in North Dakota, which were granted at statehood for the support of primary and secondary education. Some of these tracts are used for activities such as wind development or gravel extraction in addition to the current hay/pastureland or cultivated land uses. There are ten State Mineral Trust Lands parcels located within the Corridor (Figure 6.2-2, Appendix A). There are no Surface Trust Lands or School Trust Lands within the Corridor.

6.2.2 Land use impacts/mitigation

6.2.2.1 Agriculture

Temporary and permanent impacts to agricultural land use from the Project are anticipated to be negligible. Land use in the Corridor is primarily agriculture and is not expected to change because of construction of the Project. For construction that takes place outside of the winter months, temporary impacts on agriculture may occur from construction activities including the movement of heavy construction equipment across agricultural lands. These impacts may include, but are not limited to, loss of planting opportunity, crop damage, and soil compaction. Drain tile lines may be present along the Corridor that may be damaged from drilling of structure foundations.

The area directly under the physical transmission line with, exception of the structure foundations, may continue to be used for agriculture, and permanent impacts are only anticipated where structure foundations and the Jamestown Substation expansion are located. Temporary impacts are estimates and are calculated assuming an estimated number of transmission structures based on preliminary engineering, a work pad around each structure location, estimated pulling/tensioning sites, and 30-foot-wide access roads between structures within the Project Corridor (see Sections 4.1.4 and 4.1.5 for a description of assumptions on temporary and permanent calculations). Permanent agricultural impacts are anticipated to be 4.5 acres: approximately 4.2 acres of cultivated cropland and approximately 0.2 acres to hay/pasturelands.

The Applicants have worked closely with the landowners in siting transmission structure locations along the Route to minimize land use disruptions to farming and maneuverability of farming equipment to the extent practicable. Where appropriate, the Route follows existing field edges or crosses fields in a manner designed to minimize impacts to cultivation or as discussed with each of the landowners in their respective land rights agreement.

Agricultural lands temporarily disturbed during construction will be reclaimed to preconstruction contours to the extent practicable and in accordance with landowner agreements. Temporary access roads and pulling/tensioning sites will be restored in accordance with the landowner agreement. The Applicants will work with the landowners to identify and mark drain tile lines to avoid damage during construction. Where locations are known, access roads will avoid drain tile lines where possible. When travel over drain tile lines is unavoidable, matting may be required. If drain tile lines are inadvertently damaged by construction, the Applicants will repair or replace the drain tile lines or compensate the landowner to repair or replace their own drain tile lines themselves or with their preferred contractor. Hay/pasturelands will be restored according to NRCS recommendations, unless otherwise specified by the landowner. Soils (discussed further in Section 6.9) compacted by construction activities will be restored using a deep tillage practice, or the landowners will be otherwise compensated.

The Applicants will work directly with landowners to minimize impacts. Landowners will be contacted in advance of construction activities on their property. Landowners will be made whole by the Applicants if damages to fences, gates, or drain tiles occur. Landowners will be compensated for loss of crops, damage to crops, or other damage in accordance with landowner agreements from temporary disturbances and compensated for the permanent loss of land use from the physical structures.

6.2.2.2 Existing infrastructure

No temporary or permanent impacts on existing infrastructure are anticipated. Transmission lines, natural gas pipelines, railroad crossings and roadways are present within the Corridor. Use of existing roads and the operation of other facilities (electric utility transmission lines, natural gas pipelines, and railroad crossings) will not be disrupted by the Project. The Applicants will coordinate with roadway, utility, and railroad owners to coordinate the Corridor crossing with a North Dakota One Call so that Project foundation construction avoids buried natural gas pipelines, electric lines, and any other potentially buried infrastructure.

Interstate 94, U.S. Highway 281, State Highways 13, 20, and 46, and several township and county roads and railroads are crossed by the Route. These crossings will be coordinated with the applicable agency and spanned with safety precautions in place, and as a result, impacts are not anticipated and, therefore, no mitigation is proposed.

6.2.2.3 Mining resources

No temporary or permanent impacts on mining operations are anticipated from the Project. There is one sand and gravel pit located in the Corridor. The Applicants have coordinated with the landowner on structure placement of the transmission line near the sand and gravel pit to avoid impacts to current and future operations of the pit.

6.2.2.4 Conservation areas

No temporary or permanent impacts to conservation areas are anticipated. The Corridor will not cross any Nature Conservancy Lands, NRCS Easements, USFWS grassland easements, NDGFD WMAs, National Forests, National Grasslands, NWRs, WPAs or State Parks.

The Corridor includes 20 parcels that contain USFWS wetlands easement areas (USFWS 2023a). A USFWS wetland would be impacted by placement of a structure within it, but placement of a structure in the uplands of a wetland easement, outside of the protected wetlands, does not constitute an impact. Based on current Project design, no structures or temporary disturbances are planned within the actual wetlands within these parcels; all work on USFWS wetland easement parcels will occur on upland areas. Training will be implemented to further communicate avoidance of wetlands within USFWS wetland easements.

There are two Aquatic Habitat Program (Save Our Lakes) easements through NDGFD within the Corridor. The NDGFD has expressed that it does not have concerns with placing structures within these easements, however, it requested that if a structure location is to be located within one of the easements, the Applicants provide the location of the tower, the size of area to be disturbed by the construction, the expected time and duration of construction, and the reclamation plan for the disturbed area. NDGFD would then issue a document/letter granting permission to build on the easement (Appendix E includes copies of the email correspondence with NDGFD in reference to the Save Our Lakes easements). The Applicants will coordinate with NDGFD to provide the requested information as applicable.

6.2.2.5 State trust lands

No impacts to state trust lands are anticipated from the Project and, therefore, no mitigation is proposed. There are ten NDDTL Mineral Trust parcels within the Corridor. As confirmed by NDDTL, Mineral Trust parcels require no approvals or permits to construct or operate a HVTL on these parcels (see Appendix E).

6.3 Public services

6.3.1 Description of resources

Public services generally refer to services provided by government entities to their citizens or by private entities that benefit public health and safety, such as education and emergency services (e.g., fire, ambulance, and police). Public services are concentrated within the municipalities near the Study Area, including Jamestown, Edgeley, and Ellendale.

6.3.1.1 Airports

No commercial airports or private airstrips are present within the Corridor. The closest commercial airport is the Ellendale Municipal Airport which is located approximately 1.8 miles east of the Route. The Jamestown Regional Airport is located approximately 5.5 miles west of the Route at the closest point. The Edgeley Municipal Airport is located approximately 5.7 miles west of the Route

There are four known existing private airstrips within 10.0 miles of the Route. They include one located approximately 0.7 miles of the Route in Section 21, Township 137N, Range 63W, one approximately 2.5 miles of the Route in Section 8, Township 138N, Range 62W, one approximately 3.3 miles of the Route in Section 26, Township 136N, Range 64W, and lastly one 7.2 miles from the Route in Section 12, Township 132N, Range 62W.

Landowners may utilize small aircraft (spray planes) at low altitudes for agricultural purposes such as the application of fertilizer, pesticides, or fungicides. Once the Project is constructed, spray plane pilots in close proximity to the Corridor will need to employ the same flight patterns as used when working adjacent to tree rows, transmission or distribution lines, or communication structures.

6.3.1.2 Electrical service

OTP and Montana-Dakota provide electric transmission services to the Study Area, including the cities of Jamestown, Edgeley, and Ellendale, and the surrounding rural areas. The Corridor is located in the service territory of two of North Dakota's electric distribution cooperatives, including the Northern Plains Electric Cooperative on the northern portion of the Corridor and the Dakota Valley Electric Cooperative on the southern portion of the Corridor.

6.3.1.3 Roads and traffic

Roads within the Corridor consist of federal, state, county, and township roads. The Corridor encompasses portions of Interstate 94 (I-94) in Section 31, Township 140N, Range 62W and Section 6, Township 139N, Range 62W; U.S. Highway 281 (U.S. 281) in Section 3, Township 130N, Range 63W; State Highway 20 in Sections 16 and 17, Township 141N, Range 63W; State Highway 13 in Section 4, Township 133N, Range 63W; State Highway 46 in Section 32, Township 137N, Range 63W as well as crossing county, municipal, and local roads. Roads are shown on Figure 6.2-1 in Appendix A.

Average daily traffic (ADT) volumes of major highways within the Corridor are documented in Table 6.3-1. In general, the highways in and near the Project have an ADT that is a small fraction of the roadway capacity.

Table 6.3-1. Average daily traffic levels measured in 2022 and 2023.

Road Segment	ADT	Year Measured
Interstate 94-West of the crossing	9,560	2023
Interstate 94- East of the crossing	12,020	2023
U.S. Highway 281- West of the crossing	1,100	2022
U.S. Highway 281- East of the crossing	1,280	2022
State Highway 20- North of the crossing	975	2022
State Highway 20- South of the crossing	1,520	2022
State Highway 13- West of the crossing	675	2022
State Highway 13- East of the Crossing	520	2022
State Highway 46- West of the crossing	445	2022
State Highway 46- East of the Crossing	340	2022

Source: North Dakota Department of Transportation (NDDOT) 2024.
Notes: Average Daily Traffic (ADT) is an average of all vehicle trips in both directions on a segment of roadway over a year, divided by 365.

6.3.1.4 Water supply

Stutsman Rural Water District and Southeast Water Users District supply potable water to communities and rural residences near the Study Area (NDDWR 2024). Both participate in North Dakota's Wellhead Protection Program. Local water supplies are fed by wells drawing ground water from the underlying Spiritwood Aquifer (Stutsman Rural Water District 2023), Hankinson Aquifer, and Middle LaMoure Aquifer (Southeast Water Users District 2023). The location of known ground water wells is shown on the Surface Waters figure, Appendix A, Figure 6.11-1.

6.3.1.5 Communications

One communication tower, owned by Otter Tail Power, is located within the Corridor at the Jamestown substation expansion area. Two additional communication towers are immediately adjacent to the corridor, one located approximately 113 feet outside of the Corridor east of the Jamestown Substation, and the second located approximately 284 feet outside the corridor east of the Ellendale Substation. Additionally, radio towers, fiber optic and telephone lines for internet and phone service are present throughout the Study Area. Communication towers and existing HVTLs are shown in Appendix A, Figure 6.2-1.

6.3.2 Public services impacts/mitigation

6.3.2.1 Airports

No temporary or permanent impacts to airport navigational aids, weather observation station facilities, airspace, or glide slope intercept for public airports are expected from the Project. Transmission lines can present a safety concern to airports and aircraft. The Federal Aviation Administration (FAA) has established guidelines to determine the appropriate setback distance for tall structures, including transmission lines, from public

use airports and heliports. The Applicant's used the FAA Notice Criteria Tool to analyze the potential for impacts on airspace by the Project based on preliminary transmission structure locations and heights. Results of the analysis indicated no impacts are anticipated. The Applicants will submit the transmission structures for aeronautical study and FAA Determinations of No Hazard prior to construction of the structures, as needed, and will comply with applicable requirements for pre- and post-construction FAA submittals. Additionally, the Applicants will continue to consult with the North Dakota Aeronautics Commission (NDAERO) and the FAA to assess potential impacts of the Project and follow their guidance regarding notifications to airports and the usage of safety markings or equipment, if required by each agency. See Section 8.0 for more information.

6.3.2.2 Electrical service

No temporary or permanent impacts on electrical services are anticipated. The Route is anticipated to cross electric service infrastructure throughout the Project Corridor, however, agreements and coordination will be undertaken with other utilities to ensure safe crossings, as needed. The Applicants will develop an Emergency Response Plan in the rare event damage to electric service infrastructure occurs.

In general, the Study Area will see positive benefits in the form of improved reliability, efficiency and resiliency by the addition of the Project.

6.3.2.3 Roads and traffic

No temporary or permanent impacts are anticipated for the primarily used roads of I-94, U.S. Highway 281, or State Highways 13, 20, and 46 as a result of Project vehicle traffic. Construction equipment and material weights generally will be no greater than the existing large farm equipment common in the vicinity of the Project. The Applicants will acquire all necessary road haul and access permits. In addition, the Applicants will apply for an overweight permit from the North Dakota State Highway Patrol, if necessary.

The construction workforce is expected to generate increased vehicle trips on local roadways during construction. Considering the combination of existing federal, state and county highways throughout the Study Area, the traffic impacts are anticipated to be negligible. On roads with higher ADT such as U.S. Highway 281 and I-94, this marginal increase in vehicle trips used by construction personnel would likely be imperceptible. In areas of the Corridor with low levels of daily traffic, notably some county roads and most township roads, the additional construction vehicle trips may be perceptible; however, no significant or prolonged impact on traffic is expected as the Project will be spread out across the approximately 92-mile Corridor and construction work is anticipated to be completed within 2 years. Slow-moving construction vehicles may cause delays on smaller roads, but these disruptions will be similar to the movement of farm equipment during planting and harvest seasons and are not likely to cause significant delays. In addition, delays may occur as the transmission line is being strung across a roadway. These impacts will be short term and temporary guard structures may be utilized as necessary to eliminate traffic delays and provide safeguards for the public.

The Applicants will acquire an access permit from the NDDOT if an access point is needed for I-94, U.S. Highway 281, or State Highways 13, 20, or 46 as well as develop traffic

control plans as required. The Applicants will coordinate with the Counties and Townships to minimize the impact to their roads.

6.3.2.4 Water supply

No impacts to local water supply are anticipated. Construction or operation of the Project will not significantly impact local water supply as water will be transported as needed by truck. The Applicants will evaluate the need for water for construction and the transportation of the water by truck as needed for dust suppression, dewatering, or concrete washouts. The Applicants will consult with local agencies to obtain the appropriate permits and/or approvals for temporary use of water during construction, as necessary.

6.3.2.5 Communications

No permanent or temporary impacts to communications are anticipated. One communication tower, located at the Jamestown Substation, will need to be relocated. Otter Tail Power owns the tower and impacts to communication from the relocation of the tower are not anticipated. The Project is not anticipated to permanently impact telecommunications because interference is typically only strong enough to obstruct communication signals directly under a transmission line. If interferences to telecommunications occur, the Applicants will work with the applicable communication provider and affected residents to resolve the issue.

6.4 Human health and safety

6.4.1 Description of resources

Human health and safety concerns from transmission lines include potential issues arising from electric and magnetic fields (collectively referred to as EMFs), induced voltage, stray voltage, hazardous waste, and air quality.

6.4.1.1 Electric and magnetic fields (EMFs)

EMFs are created wherever electricity flows. EMFs associated with transmission lines are considered extremely low frequency and should be considered separately. Electric fields are measured in kilovolts per meter (kV/m) and are dependent on the voltage of a transmission line. Magnetic fields are measured in milliGauss (mG) and are dependent on the current flow through a transmission line.

EMFs associated with the Project are anticipated to be similar to other existing 345-kV transmission lines and substations. The EMF associated with a HVTL surrounds the conductor and decreases rapidly with increasing distance from the conductor. EMF calculations for the Project at varying distances from the centerline of the Corridor are provided in Appendix H.

6.4.1.2 Induced voltage

The electric field from a transmission line can induce voltage on a conductive object that is parallel to and immediately under the transmission line, such as vehicles, buildings,

pipelines, railways, fences, or other equipment near the conductor. This may induce a voltage on the object, and the magnitude of this voltage is dependent on many factors, including weather conditions, object shape, object size, object orientation, object to ground resistance, object capacitance, and object location.

If the object is insulated or semi-insulated from the ground and a person touches it, a small current could pass through the person's body to the ground. This may be accompanied by a spark discharge and mild shock, similar to what can occur when a person walks across a carpet and touches a grounded object or another person. The Project will be designed to meet or exceed NESC clearances such that induced voltages do not reach unsafe levels. To the extent that landowners have concerns following construction of the Project, the Applicants will work with landowners on a case-by-case basis to mitigate concerns.

6.4.1.3 Stray voltage

Stray voltage is a condition that can potentially occur on the electric service entrances to buildings from distribution lines connected to these buildings; not typically transmission lines as proposed in this Application. The term generally describes a voltage difference between two objects where no voltage difference should exist. More precisely, stray voltage is a voltage that exists between the neutral wire of either the service entrance or of the premise wiring and grounded objects in buildings such as barns and milking parlors. The source of stray voltage is a voltage that is developed on the grounded neutral wiring network of a building and/or the electric power distribution system. Transmission lines do not by themselves create stray voltage because they do not connect directly to buildings.

6.4.1.4 Hazardous waste

The Project is located in a rural area of North Dakota. Hazardous waste from industrial or commercial activities is not likely to be present in the Study Area. Potential hazards may exist in rural areas from farm dumps and agricultural chemicals. No hazardous waste is expected to be generated by this Project.

6.4.1.5 Air quality

The Study Area is currently in attainment for both National Ambient Air Quality Standards (NAAQS) and North Dakota Ambient Air Quality Standards, as is the entire state (NDCC 33.1-15-02). The nearest ambient air quality monitoring station is located in Cass County, North Dakota, which is greater than 80 miles east of the Corridor (USEPA 2020).

6.4.2 Human health and safety impacts/mitigation

6.4.2.1 Electric and magnetic fields

No impacts to human health and safety from EMFs are anticipated. Exact EMF levels will vary based on a variety of conditions, but overall, EMF levels from transmission lines at the edge of the Corridor are not higher than EMF levels created by common household appliances (NIEHS 2002). The Applicants do not anticipate effects from EMF to

landowners; therefore, no mitigation is proposed. More information on EMFs is included in Appendix H.

6.4.2.2 Induced voltage

No impacts to human health and safety from induced voltage are anticipated. Induced voltage from capacitive coupling is not anticipated to occur because of the distance between the Project and other conductive objects along the Route. The Project will be designed to meet or exceed NESC clearances such that induced voltages are minimized. To ensure that an electric discharge from induced voltages does not reach unsafe levels, the Applicants have completed a study to verify compliance with NESC Rule 232.C.1.c, which requires that any discharge from fixed objects be less than 5 mA. During construction, the Applicants will plan to ground all existing fixed objects as needed, such as a fence or other large permanent conductive objects close to or parallel to the Route. To the extent that landowners have concerns following the construction of the Project, the Applicants will work with landowners on a case-by-case basis to mitigate concerns.

6.4.2.3 Stray voltage

No impacts to human health and safety from stray voltage are anticipated and therefore, no mitigation is proposed. Because transmission lines do not by themselves, create stray voltage as they do not connect directly to buildings, stray voltage is not anticipated.

6.4.2.4 Hazardous waste

No permanent or temporary impacts from hazardous waste are anticipated and therefore, no mitigation is proposed.

6.4.2.5 Air quality

No permanent impacts on air quality due to the operation of the Project are anticipated and temporary impacts are expected to be negligible and will not exceed NAAQS. Dust reduction measures may include enforcing speed limits on gravel roads and/or use of water or other dust suppression methods. A dust mitigation plan will be developed.

6.5 Noise

6.5.1 Description of resources

Sound is made of small fluctuations in air pressure, which propagate as longitudinal pressure waves. Sound may be characterized by its amplitude (how loud it is) and frequency (how high or low it sounds). Noise is sometimes defined as unwanted sound.

Within the range of human hearing, sound pressure may vary in amplitude by a factor of over one million. To make this scale more manageable, a logarithmic scale known as the decibel (dB) scale is used. When expressed in dB, sound pressure amplitude is known as the sound pressure level (SPL). This logarithmic scale means that decibel levels cannot be conventionally added and subtracted. If the amplitude of a sound is doubled, for example by adding an identical sound source, the SPL will increase by only 3 dB. A doubling of amplitude does not correlate to a doubling of perceived loudness: a change of 3 dB is

considered a just-noticeable difference, a 5 dB change is considered readily perceptible, and a 10 dB change is considered a doubling or halving of loudness.

Frequency is measured in hertz (Hz), which is equivalent to the number of sound wave cycles per second. Since the human ear does not hear all frequencies equally well, the A-weighted decibel (dBA) is used to reflect this sensitivity by giving less weight to less audible components of sound (such as low frequencies), while giving slightly higher weight to components of sound in more sensitive frequencies.

The Corridor passes through primarily rural and agricultural areas. Primary existing sources of noise are likely to include agricultural activities, traffic on local roadways, aircraft overflights, and ambient wind noise.

6.5.1.1 Construction noise

Operation of construction equipment such as excavators, cranes, trucks, etc. will generate noise during Project construction.

6.5.1.2 Operational noise

Corona noise is generated when a HVTL is operating. This noise is typically heard as a crackling or hum. The noise is strongly affected by atmospheric conditions such as humidity and precipitation. During dry conditions, the noise may be nearly nonexistent, while during foggy or rainy conditions, it may be clearly audible.

Maintenance of the Corridor using noise-generating equipment such as lawnmowers, bush hogs, and chain saws, etc., may occur on a seasonal and periodic basis.

6.5.2 Noise impacts/mitigation

6.5.2.1 Construction noise

Construction will be temporary in nature and impacts from construction noise will also be temporary and intermittent. Construction noise typically includes short-term, intermittent noise associated with operation of heavy equipment and transport of equipment and personnel to and from construction sites during daytime hours. Residents living in close proximity to the construction of the Project could be temporarily affected by noise occurring during construction activities. However, the noise at a single location would be more temporary and dissipate as construction crews progress along the Project's route. Construction equipment will be maintained and fitted with standard, functioning mufflers or silencers as appropriate to minimize excessive noise.

6.5.2.2 Operational noise

Temporary and permanent impacts from operational noise are anticipated to be negligible given the low volume of the noise and distance from occupied homes and therefore, no mitigation is proposed. Corona effects occur when air molecules near conducting wire are ionized due to changes in the electric field intensity at the conductor surface. Corona effects are expected to be low enough that no substantial audible sound will result outside of the Project Corridor and, therefore, no mitigation is proposed. The sound is most noticeable when conductors are wet as a result of precipitation.

Maintenance of the Corridor may occasionally be required but is expected to be short-term and temporary so permanent noise impacts are not anticipated. Maintenance equipment should be well-maintained and fitted with standard, functioning mufflers or silencers as appropriate to minimize excessive noise.

6.6 Visual

6.6.1 Description of resources

The Corridor is located in the Prairie Pothole Region of North Dakota along the eastern mixed-grass prairie. The landscape topography crossed by the Corridor is a mixture of prairie, agriculture, sparse residences and farmsteads, wetlands, and gently rolling hillside. The Corridor is primarily located in a rural area of North Dakota, though small towns and cities are present at low density in and adjacent to the Study Area. A topographical map of the Project area is shown in Appendix A, Figure 6.6-1. Rural residences and farm buildings scattered along rural county or township roads are focal points in the agricultural character of the landscape. Isolated areas of deciduous and coniferous trees occur throughout the Corridor, primarily planted as landscaping and to serve as windbreaks, shade, property line delineators, and enhanced privacy around residences or farmsteads. Throughout the Corridor there are wetland areas, some of which are under easements with the USFWS. Wetland areas throughout the Corridor are predominantly freshwater emergent wetlands (USGS 2022a), dominated by cattails, sedges, rushes, and willows. There are also areas of hay/pasturelands and unbroken grassland which will be traversed by the Route.

No historic structures are within the Corridor. The nearest historic structures are within the cities of Ellendale and Jamestown.

6.6.2 Visual impacts/mitigation

Construction of the Project may result in temporary visual impacts, including the presence of construction equipment.

The Project will create an additional, minor visual element in the vicinity, but the degree to which the transmission line will be visible will vary by location. The visual impact of the Project may be noticeable to those who live near the Project, or community residents traveling along area roads. By avoiding residences where practicable, the Applicants have minimized impacts to the viewshed from residences to the greatest extent possible. The viewer's degree of discernible detail decreases as the physical distance from an object increases.

Permanent visual and aesthetic impacts are anticipated to be minimal and similar to what exists currently. The Route and associated structures would be visible to landowners who live near the Route, as well as travelers on area roads.

The Applicants will continue to work with landowners and public agencies to identify concerns related to the Project and aesthetics. The Applicants intend to minimize permanent visual impacts as follows:

- Where feasible, the location of transmission structures and other disturbed areas will be determined by considering input from landowners or land management agencies to minimize visual impacts.

- Transmission structure designs will be uniform to the extent practicable. In general, the Applicants propose to use steel-monopole structures ranging in height from approximately 120 to 180 feet, with an average height of 155 feet. Care will be used to preserve the natural landscape; construction and operation will be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings including the use of construction mats. During operation, clearing of trees and shrubs will be conducted only as necessary in accordance with NERC standards and to allow for the safe and reliable operation and inspection of the Project.

- Structures will utilize Corten steel (i.e., self-weathering steel) that have a dark brown matte finish to minimize sunlight reflections that could be visible to nearby landowners and commuters using nearby roadways.

- Care will be used to preserve the natural landscape; construction and operation will be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings. Once operational, clearing of trees and shrubs will be conducted only as necessary per the NERC and Applicant's standards to allow safe operation and inspection of the Project.

6.7 Cultural and archaeological resources

6.7.1 Description of resources

The Applicant's certified cultural resources consultant conducted Class I and Class III cultural resource studies, in coordination with North Dakota State Historic Preservation Office (NDSHPO). The results of these studies are described below and included in Appendix I.

6.7.1.1 Regulatory framework

The NDSHPO[13] outlines and summarizes the state and federal laws and regulations that are relevant to cultural resources in the statewide comprehensive plan (NDSHPO 2021). NDCC 55-01 through 55-12, State Historical Society and State Parks, covers cultural resources. NDCC 55-02-07.1 states that any historical or archaeological artifact or site that is found or located on any land owned by the state of North Dakota or its political subdivisions and is significant in understanding and interpreting the history and prehistory of the state must not be destroyed, defaced, altered, removed, or otherwise disposed of without the approval of the state historical board. NDCC 55-10-11 recognizes federal historical preservation law and grants NDSHPO the duty to locate, survey, investigate, preserve, and protect significant historic, architectural, archaeological, and

[13] The State Historical Society of North Dakota includes the Archaeology and Historic Preservation Department. The NDSHPO is managed under this department and the Director of the State Historical Society of North Dakota serves as the state historic preservation officer.

cultural sites, structures, and objects and gives NDSHPO the ability to review all federal undertakings.

The Commission's siting criteria directs applicants to consider cultural resources when siting a transmission facility. Exclusion and avoidance areas, with a reasonable buffer to protect the integrity of the area, include designated or registered national historic sites, landmarks, and monuments; designated or registered state historic sites, monuments, historical markers, and archaeological sites; and historical resources which are not specifically designated as exclusion or avoidance areas.

NDSHPO defines cultural resources as sites, isolated finds, site leads, and Cultural Heritage. NDSHPO sites are locations of past human activity older than 50 years containing one or more cultural features, six or more artifacts, intact subsurface cultural materials, or a combination thereof. Isolated finds are areas of past human activity older than 50 years containing five or fewer artifacts with limited potential for associated subsurface cultural materials. Sites leads are either locations containing cultural resources reported by non-professionals, isolated finds with the potential for subsurface cultural material but not yet verified by a professional, or an architectural property that cannot be fully documented. Cultural Heritage resources are traditional cultural properties, sacred sites, and/or sites of cultural and religious significance to Tribes and other groups.

A federal nexus through USACE has been identified for the area of the Project that crosses the James River. Federal agencies must comply with the National Historic Preservation Act (NHPA) (1966, as amended in 2000), and its implementing regulations at 36 CFR 800. According to the regulations of the Advisory Council on Historic Preservation (ACHP) implementing Section 106 of the NHPA (16 United States Code [U.S.C.] 470f; 36 CFR 800), federal agencies must consider the potential effect of an undertaking on "historic properties," which refers to cultural resources listed in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Historic properties include landscapes, buildings, sites, districts, structures, or objects that are significant under the NRHP criteria. USACE will conduct its own Section 106 review of the portions of the cultural resource survey area that falls within USACE jurisdictional areas. USACE will consult with NDSHPO, as well as other consulting parties identified by USACE, and NDSHPO will issue a concurrence letter to the USACE. For areas of the cultural resource survey outside of USACE jurisdictional areas, the Applicant and their cultural resource consultant have coordinated with NDSHPO and a separate concurrence letter for the non-federal portion of the cultural resource survey area will be issued for the non-federal portion of the Project.

All work was, and will continue to be, conducted to professional standards and guidelines in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register [FR] 44716-44742), the Secretary's Standard for Identification (48 FR 44720-44723), and the NDSHPO guidelines for conducting cultural resource surveys.

6.7.1.2 Archaeological resources

Between September 2023 and July 2025, the Applicants have coordinated and continue to coordinate with NDSHPO on the appropriate scope and level of survey for cultural resources. A Class I (Mueller et al. 2024) and a Class III (both of which are included in Appendix I) have been completed for the Project. The Class I included the Corridor plus a 0.5-mile buffer for LiDAR analysis and a 1-mile buffer for the file search review.

The Applicants have also completed a Class III within a 500-foot survey corridor for areas identified in the Class I and in coordination with NDSHPO that had the highest potential for cultural resources potentially affected by temporary and/or permanent ground disturbance. Surveys were completed where determined to be needed in consultation with NDSHPO and where right of entry has been obtained as of November 2024. Of the current Corridor, 9.4 miles of cultural survey is still needed, including 4.7 miles of property where right of entry was unable to be obtained prior to filing of this Application, as shown on Figure 6.7-1 in Appendix A. Remaining survey will be collected prior to construction on those properties. An Addendum Class III Report will be prepared once survey is completed for the remaining 9.4 miles and filed with the Commission. The Class III survey methodology was coordinated with and approved by NDSHPO. The Class III Reports (Volume 1 and 2) have been submitted to NDSHPO and will be coordinated with USACE and USFWS for Section 106 consultation related to the James River crossing. Once responses on the Class III Reports are received from NDSHPO, and once final routing and condemnation proceedings, if any, are complete, the Applicants will submit a Consolidated Application supplemental filing.

6.7.1.2.1 Class I Literature Review

The Class I review was completed following Guidelines Manual for Cultural Resources Inventory Projects (NDSHPO 2020) and NDSHPO's guidelines discussed during a call with NDSHPO on September 21, 2023. The Class I review included a file search of the North Dakota Cultural Resources Survey (NDCRS) data files maintained by the NDSHPO, review of available LiDAR data, and a desktop review of historical and modern aerial imagery. Review of the NDCRS data files included review of archaeological, historical, architectural, and Cultural Heritage resource forms and cultural resources survey reports available at the NDSHPO in Bismarck, North Dakota. The file search also included a review of the NRHP records maintained by the National Park Service (NPS) to identify properties listed in the NRHP. LiDAR data, a high-resolution, accurately detailed, three-dimensional representation of the terrain and objects on it taken with laser light from planes, was collected from the North Dakota Department of Water Resources (NDDWR) and the USGS Earth Explorer data portal and then viewed using Esri ArcMap to identify LiDAR anomalies that have the potential to be precontact archaeological resources. Historical and aerial imagery was collected from the USGS Earth Explorer data portal and Google and then used to identify historical farmsteads.

On April 2, 2024, NDSHPO requested that areas containing unidentified LiDAR anomalies and areas of terraces and floodplains at all major drainage crossings be included in the Class III survey area.

The Class I, included in Appendix I, was supplemented with further research as part of the Class III, also included in Appendix I. Results of the Class I and Class III are included in the next Section.

6.7.1.2.2 Class III Resources Inventory

The Applicants coordinated with the NDSHPO on the appropriate scope and level of survey. A Class III, included in Appendix I, was completed from May through November 2024, typically within a 500-foot-area centered on the Route for areas identified in consultation with NDSHPO and where the Applicants had right to enter properties. The remaining 9.4 miles to be surveyed, as shown on Figure 6.7-1 in Appendix A, include approximately 4.7 miles where right of entry was unable to be obtained prior to filing this Application. A survey will be completed prior to construction on the approximately 9.4 miles that remain to be surveyed. A supplemental Class III Report will be filed with the PSC and NDSHPO for the remaining survey areas and NDSHPO's response will be filed with the PSC prior to construction in these areas.

A total of 6 previously recorded sites and site leads are located within the Project Corridor. Of these, four are not eligible for inclusion in the NRHP. Two of these resources are significant to the North Dakota State Historic Sites Register, but the portions crossed by the Project are not-contributing to the site's overall significance. The previously recorded cultural resources include historical trail segments, a historical post office, a historical railroad, and an historical isolated find. A total of 742 acres within the Corridor were surveyed as part of the Class III, and 49 new cultural resources were identified within the Corridor. The Class III survey identified six archaeological sites, one architectural site (historical farmstead), two combined architectural and archaeological sites (also historical farmsteads), 39 Tribal and Cultural Heritage Resources, and one combined archaeological and Cultural Heritage Resources within the Project Corridor. The Class III Reports have been completed for the areas that were surveyed and were submitted to NDSHPO in July of 2025. Once NDSHPO's response is received, it will be filed with the Commission.

6.7.1.3 Tribal cultural resources

The Applicants have engaged in ongoing voluntary coordination with Tribes to seek input on Tribal cultural resources. The Applicants have reached out to 15 Tribes who may have historical interest in projects in North Dakota.

Of the 15 Tribes, one Tribe has expressed interest in the Project: Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota. The Applicants' cultural resource consultant and Tribal Cultural Specialists from the Sisseton-Wahpeton Oyate conducted cultural resource surveys of the Project from May through November 2024. Additionally, Sisseton-Wahpeton Oyate will be invited to participate in the areas that remain to be surveyed.

6.7.2 Cultural and archaeological impacts/mitigation

No permanent or temporary impacts to cultural and archaeological resources are anticipated, however, impacts may occur if an unanticipated discovery is made. Project infrastructure has been sited to avoid direct impacts to known NRHP-eligible historic

properties, unevaluated cultural resources, and Tribal and Cultural Heritage Resources. Additionally, the Project plans to avoid NRHP-eligible historic properties or unevaluated cultural resources and Tribal and Cultural Heritage Resources identified during supplemental survey of the portions of the Corridor where survey has not been completed.

In areas where known NRHP-eligible historic properties, unevaluated cultural resources, or Tribal and Cultural Heritage Resources are located within the Corridor near anticipated temporary and/or permanent impact areas, BMPs such as temporary fencing, flagging, and signage to communicate avoidance areas to construction personnel, will be installed. Appropriate buffers are being coordinated with NDSHPO and Sisseton-Wahpeton Oyate. In coordination with NDSHPO and the Tribes, cultural monitoring may also be included. If indirect impacts to NRHP-eligible historic properties, unevaluated cultural resources, and/or Tribal and Cultural Heritage Resources are determined for those areas that right of entry was obtained and subsequently surveyed during the Class III, a treatment plan will be developed between the Applicants, the participating federal agencies, Tribes, and NDSHPO, as applicable, to avoid impacts and effects. Additionally, the Applicants have developed an Unanticipated Discoveries Plan, which will be followed during construction in the event that potential cultural resources or human remains are encountered (Appendix I). A copy of the Unanticipated Discoveries Plan will be provided to the applicable federal agencies, Tribes, as well as NDSHPO.

6.8 Recreational resources

6.8.1 Description of resources

Recreational resources in the Study Area and adjacent areas include trails, rivers and streams, and federal, state, and local lands. Outdoor recreational activities in the Study Area include riding all-terrain vehicles and snowmobiles, fishing, hunting, swimming, hiking, golfing, camping, and nature observation.

6.8.1.1 Federal, state, and local recreation lands

The USFWS Kulm Wetland Management District and USFWS Chase Lake Wetland Management District manage the USFWS wetland easements within the Corridor. There are 20 USFWS wetland easements encompassing 177.6 acres within the Corridor. Wetland easements are not directly intended for recreational use; however, they indirectly support recreational use by attracting migratory waterfowl and game that are hunted within the area as well as observed by naturalists and photographers.

NDGFD's Wildlife Management Areas (WMAs), the North Dakota Parks and Recreation Department's (NDPRD) state parks, nature preserves, and recreation areas, local county and private campgrounds, and City Parks play a large role in the North Dakota outdoor recreation system. There are no WMAs, state parks, nature preserves, county or private campgrounds, or city parks located within the Corridor.

Private Land Open to Sportsmen (PLOTS) is a voluntary program offered to landowners by NDGFD that provides landowners with monetary compensation for allowing public access to their land for fishing or hunting. There is one PLOTS parcel within the Corridor, adjacent to U.S. Highway 281.

There are no other federal, state, or locally managed or owned lands within the Corridor or Study Area that are used recreationally.

6.8.1.2 Trails and scenic byways

No designated trails (public hiking, snowmobile, historic, or scenic) are located within the Corridor. No designated state or federal scenic byways or backways are located within the Corridor or within view of the Corridor.

6.8.1.3 Other recreational resources

The Corridor crosses the James River and tributaries, an unnamed lake, Maple Creek, the Maple River and tributaries, Cottonwood Creek and tributaries, Beaver Creek and tributaries, Sevenmile Coulee Watershed, Bone Hill Creek and tributaries, Dry Creek Watershed, Elm River Dry Branch Watershed, and Sewer Branch Watershed (see Section 6.11 for more information on surface waters). Some of these surface waters may be seasonally used for fishing. However, there are no public boat launches or known fishing docks within the Corridor. No additional designated recreational resources, such as boat landings, golf courses, playgrounds, or ball fields are located within the Corridor.

6.8.2 Recreational impacts/mitigation

6.8.2.1 Federal, state, and local recreation lands

No impacts to federal, state, and local recreation lands including wetland easements and their indirect recreational uses are anticipated. Temporary and permanent impacts within the boundaries of USFWS wetland easements have been avoided by siting structures outside of those wetlands. Training will be implemented to further communicate avoidance of wetlands within USFWS wetland easements.

There are no state or locally managed lands such as county parks, state parks or nature preserves within the Corridor; therefore, no impacts are anticipated. There is one PLOTS parcel within the Corridor. Any changes to the PLOTS agreements will be negotiated between NDGFD and the landowner.

6.8.2.2 Trails and scenic byways

No trails (public hiking, historic, or scenic) or scenic byways are located within the Corridor and, therefore, no impacts are anticipated and no mitigation is proposed.

6.8.2.3 Other recreational resources

No impacts to other recreational resources are anticipated and therefore, no mitigation is proposed. Hunting may occur on private lands within the Corridor; however, the construction and operation of the Project will not prohibit access to hunting areas, and landowners and hunters may access a hunting area by passing under the Route once construction is complete.

6.9 Soils

6.9.1 Description of resources

The Project is situated within the Drift Plains Class IV ecoregion of the Northern Glaciated Plains. The Drift Plains were formed by retreating glaciers that created a subtle rolling topography comprised of glacial till. The deep loamy soils support tall grass, short grass, and transitional mixed-grass prairie including western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), and blue grama (*Bouteloua gracilis*) (Commission for Environmental Cooperation [CEC] 2011, United States Forest Service [USFS] 1994). The dominant land use within the Corridor is agriculture. Cultivated cropland in the Corridor includes corn, soybean, canola, flax, and sunflower (USDA 2024). Cattle grazing and feeding operations are also found on rangeland and hay/pasturelands within the Study Area. One apiary is located within the Study Area.

Soils within the Corridor can be grouped by soil associations. An association is a group of individual soil series that occur together in a characteristic geographic pattern or a distinctive pattern of soils, relief, and drainage. Each soil association is typically composed of one or more major soils and one or more minor soil components. Soil associations are defined by each county's NRCS office.

GIS soils data for general State Soil Geographic (STATSGO) soil associations and Soil Survey Geographic (SSURGO) data are made available online by NRCS. A total of 61 soil types were identified within the Corridor. A summary of the soils within the HVTL Corridor are shown in Table 6.9-1.

The dominant soil series found within the Corridor is the Barnes-Svea loams series, comprising approximately 48.4 percent of the Corridor. The Barnes-Svea series is a very deep, well-drained soil formed from calcareous and loamy till and from local alluvium resulting from weathering of the till and is classified as prime farmland.

Initial geotechnical soil boring investigations were conducted in December 2023, and January 2024, and will be conducted again prior to construction, to assess soils and other geophysical features along the Route where structures are anticipated, notably in areas where a deeper foundation is needed such as where angle structures will be located.

Table 6.9-1. STATSGO soil associations

Soil Association	Acres of Soil Type in Corridor	Percent of Soil Type in Corridor
Barnes-Svea loams	807.5	48.4
Buse-Barnes loams	168.9	9.9
Hamerly-Tonka loams	99	5.9
Sioux-Arvilla complex	55.4	3.4
Other	539.4	32.4
Total	**1,670.2**	**100.0**

Sources: USDA, NRCS. 2025.

6.9.1.1 Prime farmland

Four farmland soil classifications are present within the Study Area, including Prime Farmland, Prime Farmland if Drained, Farmland of Statewide Importance, and Not Prime Farmland. No Farmlands of Unique Importance were identified in the Study Area. Appendix A, Figure 6.9-1 displays the location of these farmland classifications within the Corridor. Soils considered Prime Farmland are widespread throughout the Corridor, comprising 59.1 percent of the Corridor. Soils designated as Not Prime Farmland are concentrated in the northern portion of the Corridor, mostly near the Sevenmile Coulee, comprising 21.2 percent of the Corridor. Soils identified as Farmland of Statewide Importance are interspersed along the entirety of the Project Corridor, comprising 15.0 percent of the Corridor. Soils classified as Prime Farmland if Drained are somewhat more common along the southern portions of the Corridor, comprising approximately 4.7 percent of the Corridor. Table 6.9-2 displays farmland classifications and associated acreage within the Corridor.

Table 6.9-2. Farmland classifications within the Corridor

Farmland Classification	Acres of Corridor	Percent of Corridor
Prime Farmland	986.7	59.1
Farmland of Statewide Importance	251.0	15.0
Prime Farmland if Drained	78.1	4.7
Not Prime Farmland	354.8	21.2
Total	**1,670.2**	**100.0**

Source: SSURGO 2024.

6.9.2 Soils impacts/mitigation

Permanent impacts to soils will be negligible and temporary impacts to soils will be mitigated with BMPs. Surface soils are anticipated to be temporarily impacted by construction activities including site clearing, grading, and excavation activities at the substations and at each transmission structure work pad location, pulling/tensioning sites, material storage and laydown areas, and temporary access roads. Surface soils are also anticipated to be temporarily impacted during the transport of crews, machinery, materials, and equipment over temporary access roads along the Corridor. Soil compaction may occur on these temporary access areas.

Permanent impacts on soils will be limited to areas where the transmission structure foundations are located and in the Jamestown substation expansion areas. The Project will not result in a significant change in soil and farmland resources as the soils and land use within the Corridor and lands traversed by the Route between transmission structures will be farmable upon completion of construction.

To address impacts to soil, the Construction Contractor will implement the following mitigation measures for the Project:

- Topsoil and subsoils will be segregated, stockpiled, and labeled within the areas disturbed along the Corridor.

- Stockpiled soils will be respread and recontoured on the associated disturbance area from where it was removed.
- Excess subsoils and rock will be hauled off-site and offered to landowners or disposed of at an approved landfill.
- Matting will be used to minimize or avoid soil compaction where necessary.
- Erosion and sediment control BMPs will be established prior to construction, then maintained and controlled through application of the Project Stormwater Pollution Prevention Plan (SWPPP).
- Maintenance operations will be scheduled during periods of minimum precipitation to minimize the potential of surface runoff and to reduce the risk of erosion, rutting, sedimentation, and soil compaction. However, emergency repairs to the transmission line may occur during periods of inclement weather. Ruts, scars, and compacted soils resulting from emergency activities will be repaired by subsoiling, Para plowing, scarifying, harrowing, or discing, as appropriate, if damages were to occur due to emergency repairs.

Soils disturbed during construction will be decompacted and restored to preconstruction contours and vegetation to the extent practicable and in accordance with landowner agreements.

6.10 Geologic and groundwater resources

6.10.1 Description of resources

The Corridor is located within the Drift Plains which is within the Class III Northern Glaciated Plains ecoregion. The geomorphology of the Northern Glaciated Plains is gently undulating slopes to glacial till plains. The Drift Plains were formed by retreating glaciers that created a subtle rolling topography comprised primarily of glacial till (USFS 1994, NDGFD 2015).

6.10.1.1 Geology

The Corridor is underlain by Quaternary-age glacial sediments deposited by glacial ice originating from the Keewatin Ice Sheet. Glacial till is the dominant type of surficial sediment. The glacial till can be described as an unsorted, unbedded mixture of boulders, gravel, and sand in a matrix of silt and clay, yellowish-brown to olive-gray in color (USGS 2022b, Bluemle 1979).

According to a review of NDGS Landslide Deposits and the USGS Landslide Overview Map of the Conterminous United States, the Study Area has a low susceptibility and low incidence of landslides (NDGIS 2023). There are historic landslide deposits in the Study Area and one feature located within the Corridor near where the Sevenmile Coulee and James River intersect. Landslides occur when unconsolidated soils and sediments located on steep slopes become saturated, usually from a flooding event. As discussed previously, the topography in the Study Area is generally gently sloping to rolling terrain; steep slopes

are not common in this region. The Applicants reached out to the NDGS about the historic landslide in the Corridor who responded that that they did not believe the area posed an issue geologically; it is not geological unstable. However, they recommended avoiding placing structures in the area unless there is a thorough geotechnical evaluation, but spanning would not be an issue (correspondence is included in Appendix E). The Applicants have sited structures to span the historic landslide area and will further, also conduct geotechnical evaluations.

6.10.1.2 Groundwater

Undifferentiated glacial-drift aquifers are interspersed within the glacial till throughout most of Stutsman, LaMoure, and Dickey Counties, where they feed the James River Basin tributaries. The aquifer materials consist of sand and gravel that was deposited in long, narrow channels wherever there was sufficient glacial melt water to cause sorting. Thus, the area's most likely to contain these aquifers where elongated surface depressions occur, or where several sloughs are in a chain. The small size of most of the undifferentiated glacial-drift aquifers restricts their capacity to yield water (NDGIS 2023, Armstrong 1980).

The Pierre Shale is comprised of several thousand feet of volcanic and nonmarine sediments; and in the area between, nearshore-marine siltstone and sandstone in the east-central Dakotas. Yields of groundwater from the Pierre Shale are generally not expected to exceed 5 gallons per minute (USGS 2022b, Armstrong 1980). Bedrock aquifers are generally 90 to 150 feet deep in this area (Lindvig 1965).

6.10.2 Geologic and groundwater impacts/mitigation

No permanent impacts to geologic or groundwater resources are anticipated. Temporary impacts may occur to groundwater resources but are anticipated to be short-term and negligible. In the one location along the Corridor where the Project intersects a historic landslide feature, structures have been sited to span the feature. Several alternatives in this area were considered that would have completely avoided this feature, however, due to landowner preferences, avoidance of this feature by spanning this historic landslide was selected as the best route option. Due to no structures being placed within the feature itself, it is not anticipated that the Project will have an impact on the historic landslide feature.

Based on the relatively small amount of permanent infrastructure and the temporary and small-scale nature of the boring holes/excavations at each transmission structure location, the Project is not anticipated to contribute to significant impacts on the aquifers, groundwater flow, or recharge. Temporary impacts on groundwater may result from dewatering activities during construction of transmission structure foundations that may encounter shallow groundwater. If shallow groundwater is disturbed by construction, it is anticipated that it would resume its natural course of flow upon construction completion and flow would not be impacted.

Potential impacts on geologic and groundwater sources will be avoided by the following:

- Geotechnical soil boring investigations will be conducted prior to construction to help determine foundation designs to help determine the soil and geological properties at foundation sites.

- The historic landslide feature will be spanned, and structures have been sited with a buffer to avoid that feature; no structures are located within this area. Additionally, a slope stability analysis based on the geotechnical borings will be conducted for the structure locations adjacent to the historic landslide feature.

6.11 Surface water and floodplain resources

6.11.1 Description of resources

The Project Corridor is situated within the James River Basin (Hydrologic Unit code 101600). There are several surface water resources located within the Corridor (wetlands are considered separately under Section 6.12 Wetlands). While some lakes in North Dakota are in a traditional sense, large wetlands, for the purpose of this Application, lakes, streams, and rivers identified as surface waters are those that have been named/labeled as lakes in the National Hydrography Dataset (NHD). Table 6.11-1 summarizes surface waters crossed by the Corridor. Surface waters are listed geographically from northern-most crossing to the southern-most crossing. These surface waters are also shown in Appendix A, Figure 6.11-1.

Table 6.11-1. Surface waters crossed by the Corridor

Surface Water	Description of Crossing[1]
Sevenmile Coulee	The Sevenmile Coulee is crossed at five different locations between approximately 20 and 35 feet in length where the Route centerline overhangs.
James River	The James River crossing is approximately 80 feet in length where the Route centerline overhangs the surface water.
Beaver Creek	The Beaver Creek crossing is approximately 55 feet in length where the Route centerline overhangs the surface water.
Dry Creek	The Dry Creek crossing is approximately 1,720 feet in length where the Route centerline overhangs surface water. In this area the creek is partially impounded and forms a lacustrine litoral wetland (intermittently exposed aquatic bed).
Bone Hill Creek	The Bone Hill Creek is crossed four times due to meandering of the Creek. The crossings range from approximately 47.5 feet to 11.5 feet in length where the Route centerline overhangs surface water.
Cottonwood Creek	The Cottonwood Creek is crossed three times from a meander is approximately 46.9 to 5.7 feet in length where the Route centerline overhangs surface water.
Maple Creek	The Maple Creek crossing is approximately 33.5 feet in length where the Route centerline overhangs surface water.
Maple River	The Maple River is crossed at three locations, approximately 25.1, 49.3, and 65.6 feet in length where the Route centerline overhangs surface water.

Surface Water	Description of Crossing[1]
Sewer Branch Watershed	The Sewer Branch Watershed crossing is approximately 19.0 feet in length where the Route centerline overhangs surface water.

Source: USGS 2019.
1 River crossing width estimated using aerial imagery.

The James River is considered a navigable water by USACE and the NDDWR. As a navigable water, it is subject to permitting under both Section 10 of the Rivers and Harbors Act with USACE and North Dakota's Sovereign Lands Management by NDDWR. Because the Project will span the James River, a Section 10 Permit and a Sovereign Lands Permit will be required.

There are no published Federal Emergency Management Agency (FEMA) floodplain maps in the Corridor (FEMA 2024). In addition, the NDDWR does not identify floodplains in the Project Corridor on the North Dakota Risk Assessment Map Service (NDRAM undated).

6.11.2 Surface water and floodplain impacts/mitigation

Temporary and permanent impacts on surface waters are not anticipated. Construction activities will utilize BMPs that will reduce the potential for sediment to reach adjacent surface waters. All surface water rivers, streams, and lakes will be spanned by the Project; no structures will be located within these features.

There are no published Federal Emergency Management Agency (FEMA) floodplain maps in the Corridor (FEMA 2024). In addition, the NDDWR does not identify floodplains in the Project Corridor on the North Dakota Risk Assessment Map Service (NDRAM undated).

To mitigate impacts to surface water resources, the Applicants will implement the following mitigation measures for the Project in accordance with BMPs:

- No structures are being placed directly within the OHWM of any surface waters. Transmission line structures will be sited so that rivers, streams, and lakes are spanned and remain undisturbed. Construction and maintenance access also will avoid these areas. If crossing a drainage way is required for access, the appropriate permits will be obtained.
    - A surface water wetland over 1,000 feet, associated with Dry Creek in Adrian Township, is being spanned by the Project. To avoid impacts to the surface water, structures were sited around the delineated boundaries of the surface water.
- The Applicants have been in consultation with USACE for a Section 10 permit for the James River crossing (see Section 7.3 and Appendix E) and will comply with all permit stipulations as required by the permit. An application for a Section 10 permit to cross the James River is anticipated to be submitted to USACE, jointly with a Section 404 permit application, in the first half of 2025.

- The Applicants will acquire NDDEQ NDPDES permit coverage prior to construction and will follow the commitments set forth in the associated SWPPP. The SWPPP will be developed and implemented prior to initial construction activities and will include analysis of site activities that could potentially impact stormwater runoff and the BMPs to be utilized to mitigate and minimize those potential impacts. SWPPP implementation will include regular inspections of areas under construction, material storage and laydown areas, and erosion and sediment control devices. All construction personnel will be trained and required to comply with the Project's SWPPP requirements and the maintenance of all environmental protection measures. The SWPPP will be maintained until final stabilization has been achieved, as defined by the NDDEQ General Permit for Storm Water Discharges Associated with Construction Activities.

- The Applicants will use BMPs to avoid temporary impacts on surface waters. Temporary erosion and sediment control devices will be properly placed, monitored, and maintained adjacent to water resources, as defined in the Project SWPPP. These erosion control methods will remain in place until work areas become re-vegetated or are stable. The SWPPP will also include procedures to prevent the potential for spills of chemicals into surface waters and drainages. BMPs may include seasonal construction limitations, vegetative buffers, silt fencing, vehicle-tracking devices, mulching, seeding, and wattles.

- Transmission line structures will be sited so that rivers, streams, and lakes are spanned and remain undisturbed. Construction and maintenance access also will avoid these areas. If crossing a drainage is required for access, the appropriate permits will be obtained.

- Refueling construction vehicles will occur at commercial fueling facilities and/or staging areas. Staging areas and refueling areas will not be located near surface waterbodies.

- Where appropriate, the Applicants will revegetate disturbed areas in a timely manner with an approved native seed mix in consultation with the NRCS, landowners, agencies, and as per appropriate permit requirements.

- Contractors will be provided with mapping tools in addition to training and on-site signage to ensure compliance through onsite environmental construction monitoring.

6.12 Wetlands

6.12.1 Description of resources

Wetlands are an important natural resource which provide critical ecosystem functions such as streambank stabilization, discharge and recharge of groundwater, detention and removal of sediments and other contaminants, and transformation of nutrients. Wetlands also serve as an essential habitat for many different wildlife species.

Wetlands are defined in the 1977 Executive Order 11990 – Protection of Wetlands and in Section 404 of the CWA of 1986, as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The three parameters that define a wetland, as outlined in the USACE Wetland Delineation Manual, are hydric soils, hydrophytic vegetation, and hydrology (USACE 1987).

The Project is located in the Prairie Pothole Region and along the eastern mixed-grass prairie (Drift Prairie) ecoregion. The Drift Prairie is the transition zone between the wetter tallgrass prairie to the east and the drier shortgrass prairie to the west. A high concentration of temporary and seasonal wetlands occurred within the prairielands before settlement. Approximately 1.4 million wetland basin acres are present although many have been drained, filled, or consolidated (NDGFD 2023).

A desktop delineation of wetlands and other waters in the Survey Area was completed by the Applicants in January 2024. The Survey Area for the desktop delineation was defined as the Route at the time of the report, and an associated 500-foot buffer; 250 feet on either side of the centerline. The desktop delineation utilized data from National Wetland Inventory (NWI) and NHD, paired with soils map data and historic aerial imagery.

A survey plan for field delineation of wetlands and other waters was developed and concurred with in consultation with USACE (Appendix E). Consistent with the survey plan, field survey verification and delineation of wetlands occurred within the Corridor, where right of entry was allowed, which either intersected or were within close proximity to preliminary structure locations and areas of disturbance post-1976 USFWS wetland easements[14], and those determined to be jurisdictional by USACE. The field delineation followed methodology of a 2-step rapid verification of wetlands. Wetland scientists assumed the presence of hydric soils and confirmed desktop delineated wetland boundaries in the field following vegetative and hydrologic wetland indicators. The field delineation identified wetland indicators following methodology provided in the USACE Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the USACE Wetland Delineation Manual Great Plains Region (USACE 2010). Initial field delineation was completed between May and June 2024. Additional surveys were completed between June 2024 and November 2024 based on re-route requests and additional landowner right-of-entry approvals.

Following the completion of desktop and initial field delineation surveys, the Applicants submitted a Jurisdictional Determination to the USACE in July 2024. A Preliminary Jurisdictional Determination was received from the USACE in September 2024 and January 2025 (Appendix J). An Aquatic Resources Delineation Report that included field delineation information (Appendix J) was submitted to USACE on December 11, 2024. A Section 404 permit application is anticipated to be submitted to USACE in the first half of 2025.

[14] USFWS wetland easements signed prior to 1976 have known protected wetland boundaries, whereas post-1976 easements must be determined with delineations.

6.12.2 Wetlands impacts/mitigation

Temporary and permanent impacts to wetlands have been avoided to the extent practical but are anticipated. Table 6.12-1 below summarizes potential wetland impacts by wetland type of the Project. In total, 187.9 acres of wetlands are located within the Corridor. The Project is anticipated to result in up to approximately 51.5 acres of temporary impacts and approximately 0.1 acres of permanent impacts to wetlands.

Table 6.12-1. Estimated wetland impacts for the Project Route and Corridor

Wetland Type	Wetlands within Corridor	Temporary Impacts (acres)[1]	Permanent Impacts (acres)[1]
Freshwater Emergent Wetland	169.5	48.4	0.1
Riverine	10.0	1.9	0.0
Palustrine Emergent Wetland	4.5	0.5	0.0
Freshwater Pond	1.3	0.0	
Ephemeral Drainage	1.1	0.2	
Riverine	0.4	0.0	
Forested	0.3	0.0	
Riverine-ephemeral drain	0.3		
Perennial Stream	0.2	0.2	
Emergent	0.1	0.0	
Freshwater Forested/Shrub Wetland	0.1		
Ephemeral Stream	0.1	0.0	
Freshwater Forested Wetland	0.0		
Total	**187.9**	**51.5**	**0.1**

1 Due to rounding, impacts are shown as 0.0 for values equal to or less than 0.04 acres.

To minimize potential impacts, the Applicants will implement the following measures to avoid and mitigate all direct impacts to wetlands, including temporary impacts during construction.

- Avoid all direct impacts to wetlands within USFWS wetland easements; the Applicants will continue to work to avoid impacting protected wetlands within existing U.S. Fish and Wildlife Services (USFWS) wetland easements.

- The Applicants will acquire coverage under the NDDEQ General Permit for Storm Water Discharges Associated with Construction Activities prior to construction and will follow the commitments set forth in the associated SWPPP. The SWPPP will be developed and implemented prior to initial construction activities and will include analysis of site activities that could potentially impact wetlands and the BMPs to be utilized to mitigate and minimize those potential impacts. BMPs may include erosion and sediment control devices, matting, vegetative buffers, silt fencing, vehicle-tracking devices, mulching, seeding, and wattles. These erosion

and sediment control BMPs will remain in place until work areas become re-vegetated or are stable.

- Contractors will be provided with mapping tools in addition to training and on-site signage to ensure compliance with stormwater BMPs and avoidance measures. Environmental construction monitoring will take place during construction.

- Refueling construction vehicles will occur at commercial fueling facilities and/or staging areas. Staging areas and refueling areas will not be located near surface waterbodies.

- Where appropriate, the Applicants will revegetate disturbed wetland habitats in a timely manner with an approved native seed mix in consultation with the NRCS, landowner, agencies, and as per appropriate permit requirements.

- Where permanent impacts to Jurisdictional Wetlands are anticipated, the Applicants will follow stipulations as outlined in the Section 404 permit, anticipated to be received from USACE. An application for a Section 404 permit is anticipated to be submitted to USACE, jointly with a Section 10 permit application, in Q4 of 2025.

6.13 Vegetation

6.13.1 Description of resources

Vegetation is an important component to every ecosystem. It promotes soil stability and prevents erosion. It provides wildlife habitat for many species through their different life stages. Vegetation also sequesters carbon and nitrogen; playing a vital role in air, water, soil, and nutrient cycling.

6.13.1.1 Land Cover

Vegetation in the Study Area is primarily associated with the land cover. Within the Corridor, land cover and land use (discussed further in Section 6.2) is primarily agricultural. According to the National Land Cover Database (USGS 2022a), the top three land cover types that are present in the Corridor are cultivated cropland (approximately 65.9 percent of the Corridor), hay/pastureland (20.1 percent of the Corridor), and herbaceous land (6.2 percent of the Corridor). All other land cover types account for approximately 7.8 percent of the Corridor (USGS 2022a). Land use and land cover types are shown in Appendix A, Figure 6.13-1 and are summarized in Table 6.13-1 below.

Table 6.13-1. Land cover types within the Project Corridor

NLCD Land Cover Category	Acres	Percent of Corridor
Cultivated Cropland	1,100.7	65.9
Hay/Pasture	335.9	20.1
Herbaceuous	103.1	6.2
Emergent Herbaceuous Wetlands	78.8	4.7
Developed, Open Space	28.5	1.7

NLCD Land Cover Category	Acres	Percent of Corridor
Open Water	13.5	0.8
Deciduous Forest	2.8	0.2
Developed, Medium Intensity	2.4	0.2
Developed, Low Intensity	1.8	0.1
Shrub/Scrub	1.4	0.1
Barren Land	0.9	0.1
Woody Wetlands	0.3	0.0
Total	**1670.2**	**100.0**

Source: USGS 2022a.

The cultivated cropland commonly grown within the Corridor includes wheat, corn, soybeans, dry beans, canola, flax, sunflowers, barley, and edible beans. Haying and grazing are also common agricultural practices along the Route. Refer to Section 6.12 – Wetlands, for a more-detailed discussion of wetland and water-related cover types, their impacts, and mitigative measures.

6.13.1.2 Unbroken grasslands

Grasslands are a unique and valuable aspect of the North Dakota landscape. Unbroken grasslands which have not been historically tilled and are composed primarily of native grasses, forbs, and legumes are especially valuable to the ecosystem.

A desktop analysis utilizing the NDGFD unbroken grasslands data layer indicates there are 294.7 acres of potentially unbroken grasslands within the Project Corridor (NDGFD 2022). Unbroken grasslands are included in both the hay/pasture and herbaceous NLCD land cover categories; however, they do not align directly with NLCD land cover categories because the database was created by NDGFD.

6.13.1.3 Noxious weeds

There are 13 state-listed noxious weed species in North Dakota. They are:

- Absinth wormwood (*Artemesia absinthium*)
- Canada thistle (*Cirsium arevense*)
- Dalmatian toadflax (*Linaria genistifolia*)
- Diffuse knapweed (*Centaurea diffusa*)
- Houndstongue (*Cynoglossum officinale*)
- Leafy spurge (*Euphorbia esula*)
- Musk thistle (*Carduus nutans*)
- Palmer amaranth (*Amaranthus palmeri*)
- Purple loostrife (*Lythrum salicaria*)
- Russian knapweed (*Centaurea repens*)
- Saltcedar (*tamarisk spp.*)
- Spotted knapweed (*Centaurea maculosa*)
- Yellow toadflax (*Linaria vulagaris*)

Eradication of the 13 state-listed noxious weed species is enforced by all cities and counties in North Dakota. Upon approval from the North Dakota Department of Agriculture (NDDA) Agriculture Commissioner, county and city weed boards may develop their own lists of additional noxious weed species for their respective jurisdictions. Dickey County has the only addition to the noxious weed list found within the Corridor. The County identifies Downy brome (*Bromus tectorum*) as a noxious weed county-wide (NDDA 2023).

6.13.1.4 Trees and shrubs

An inventory of trees and shrubs was completed within the Corridor, where access had been granted, by the Applicants from May through November 2024. The inventory resulted in a total of 2,474 individual tree and shrub counts. The most common type of tree and shrub included the green ash (*Fraxinus pennsylvanic*), Siberian elm (*Ulmus pumila*), and sandbar willow (*Salix interior*). Most of the trees and shrubs in the Corridor were planted by landowners and farmers as windbreaks and property line delineators. Prior to any tree removal, a final inventory will be completed.

6.13.2 Vegetation impacts/mitigation

6.13.2.1 Land Cover

Land cover types with temporary and permanent impacts include mostly agriculture and wetlands. Impacts and mitigation to agricultural land use, including cultivated cropland, are discussed in Section 6.2.2.1. Impacts and mitigation to wetlands are discussed in Section 6.12.2.

Table 6.13-3 summarizes the temporary and permanent impacts by Land Cover type. There are approximately 681.8 acres of temporary impacts anticipated, and 4.5 acres of permanent impacts anticipated.

Table 6.13-2. Land cover impacts

NLCD Land Cover Category	Temporary Impacts (acres)	Permanent Impacts (acres)
Cultivated Cropland	462.2	4.2
Hay/Pasture[1]	142.6	0.2
Herbaceuous[1]	43.5	0.1
Developed, Open Space	9.6	0.0
Emergent Herbaceous Wetlands	19.4	0.0
Deciduous Forest	1.4	0.0
Developed, Low Intensity	0.2	
Developed, Medium Intensity	0.8	0.0
Open Water	1.2	0.0
Shrub/Scrub	0.7	
Barren Land	0.3	
Woody Wetlands	0.0	
Total[2]	**681.8**	**4.5**

Source: USGS 2022.

1 Unbroken grassland calculations are sourced from NDGFD unbroken grassland layer and are part of both the hay/pasture and herbaceous land cover categories (NDGFD 2022).
2 Due to rounding to the tenths of a decimal, the totals and percentages can vary slightly throughout the document

6.13.2.2 Unbroken grasslands

Temporary and permanent impacts on unbroken grasslands have been avoided to the extent practicable. The Applicants have performed habitat surveys in consultation with USFWS and NDGFD (see Sections 6.15 and 7.3 for more information) and have avoided placing permanent infrastructure within unbroken grasslands that may be habitat for protected species. Of the 294.7 acres of unbroken grasslands in the Corridor, there are approximately 122.1 acres of temporary impacts anticipated from construction and approximately 0.2 acres of permanent impacts anticipated from permanent structures to unbroken grasslands within the Corridor. Areas temporarily disturbed by construction activities will be re-seeded to native vegetation following coordination with the NRCS and landowners, with an approved native seed mix.

6.13.2.3 Noxious weeds

No temporary or permanent impacts from noxious weeds are anticipated. Construction activities can encourage the spread of noxious weeds. Movement of soils and equipment carrying noxious weed seeds could potentially spread noxious weeds along the Corridor and beyond into areas that currently have no or few noxious weeds.

The Applicants contacted the respective County Weed Boards and additional coordination will occur as applicable. Prior to beginning construction activities within the Corridor construction equipment and vehicles will be cleaned to prevent the spread of noxious and invasive weeds. Although not required by Stutsman, LaMoure, or Dickey Counties, the Applicant's Vegetation Management Plan (Appendix F) will be used during construction and reclamation activities to establish protocols for controlling the spread of noxious weeds.

6.13.2.4 Trees and shrubs

The permanent removal of trees is anticipated for safe construction and operation of the Project. Limited areas of woody vegetation will need to be cleared as part of construction of the Project and trees and shrubs may be graded, trimmed, topped, or removed completely. Approximately 2,474 trees and shrubs, plus any trees and shrubs not yet inventoried due to denied access, may need to be removed in association with Project construction activities. In total, 13.9 acres of tree and shrubs were inventoried in the Corridor during field surveys and on desktop where access was not granted, that may be removed. However, this is the total of all inventoried trees and shrubs in the 150-foot Corridor and it is not expected that every tree and shrub will need to be removed.

To mitigate impacts, existing trees and shrubs within the Corridor will be preserved wherever feasible. In areas of tree and shrub removal, the Applicants will replace trees using the Commission's Tree and Shrub Mitigation Specification 2:1 ratio, or more to increase chances for survival, through coordination with local county soil conservation districts' tree planting programs and as stipulated by the Commission in the Route Permit.

6.14 Wildlife

6.14.1 Description of resources

In general, wildlife species occurring within the Study Area are typical of agriculture landscapes, grasslands and hay/pastures, and prairie pothole wetlands in North Dakota. Examples of common mammals include several bat species, raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Coyote (*Canis latrans*). Common avian species include migratory birds, songbirds like the western meadowlark (*Sturnella neglecta*), raptors like the red-tailed hawk (*Buteo jamaicensis*), and eagle species. Reptiles and amphibians include plains garter snake (*Thamnophis sirtalis*), northern leopard frog (*Lithobates pipiens*), and western painted turtle (*Chrysemys picta*).

The Project has conducted several desktop and field wildlife studies to evaluate for, plan for avoidance of, and minimize potential impacts to species of concern and other wildlife resources along the Route and within the Corridor. Wildlife surveys were conducted following guidance and consultation with USFWS and NDGFD and are included in Appendix K. The following wildlife studies and field surveys have been conducted:

- Eagle and raptor stick nest surveys were completed in May 2023.
- Sharp-Tailed grouse (*Tympanuchus phasianellus*) lek surveys were completed from April through May 2024.
- Dakota Skipper (*Hesperia dacotae*), NLEB (*Myotis septrionalis*), Whooping crane (*Grus americana*), Rufa red knot (*Calidris canutus rufa*), Monarch butterfly (*Danaus Plexippus*), and Piping plover (*Charadrius melodus*) habitat evaluations were completed between May and November 2024. For more information on the evaluation of impacts and mitigation for these species, refer to Section 6.15, Rare and unique natural resources.
- The USFWS Range-wide Determination Key for the NLEB was accessed via the USFWS IPaC site to obtain a preliminary effect determination of Project impacts on NLEB.

Additional surveys will be conducted prior to Project construction in consultation with USFWS and NDGFD to mitigate and avoid potential impacts to eagle/raptor nests, sharp-tailed grouse, and nesting migratory bird species, as discussed below.

6.14.1.1 Avian species

Protected avian species in the Study Area include migratory birds and bald and golden eagles (raptor species).

6.14.1.1.1 Migratory birds

The Migratory Bird Treaty Act (MBTA) of 1918 was enacted for the purpose of protecting migratory birds from pressures of market hunting and trade. The MBTA affords protection to migratory birds and their parts, nests, and eggs. Under the MBTA, it is illegal

"to pursue, hunt, take, capture, kill, possess, offer for sale, sell, purchase, ship, export, or import any migratory birds alive or dead, or any part, nests, eggs, or products thereof."

6.14.1.1.2 Bald and Golden Eagles

Protections for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are afforded under the Bald and Golden Eagle Protection Act (BGEPA) of 1940 and a 1962 amendment to add protections for the golden eagle. The BGEPA protects bald and golden eagles and their nests across their entire range in the United States. Recent 2024 USFWS revisions to the BGEPA rules provide specific guidance for powerline infrastructure projects to protect bald and golden eagles.

Bald eagles are large, powerful birds. The well-known white head and white tail of breeding-age adults are iconic as the symbol of our nation. While eagle pairs typically choose the tops of large, deciduous trees to build nests, they have also been known to nest on cliffs, the ground, and on structures, including power poles and communication towers. Bald eagles are commonly sighted in the Study Area and are known to nest there. Local residents and stakeholders reported bald eagle nests during public open house meetings (summarized in Section 7.2) and Applicants noted those locations on maps for agency consultation and survey.

Adult golden eagles are brown with golden feathers on the back of their head and neck. Juvenile golden eagles also have brown bodies, but with white feather patches on the wings and on the base half of their tail feathers. Golden eagles can be found across the globe in habitats including the tundra, grasslands, intermittent forested habitats, arid deserts, and canyonlands. They are typically found in open country in the vicinity of hills, cliffs, and bluffs. Golden eagles are known to be sensitive to human activity and avoid developed areas. Golden eagles are granted protections under the BGEPA as well as the MBTA (USFWS 2024a). Because of the development of agriculture and the presence of residential developments in the Study Area, Golden Eagles are not anticipated to be found in the Project Area.

Eagles are further protected under the MBTA of 1918, along with other raptor species (hawks, owls, vultures). The MBTA prohibits the take (pursue, hunt, shoot, wound, kill, trip, capture, or collect) of protected migratory bird species or their nests without prior authorization from USFWS. It is a strict liability law, meaning that a project cannot legally take a migratory bird or its nest without USFWS permission. For this reason, ground-nesting bird surveys are usually recommended immediately prior to ground-disturbing project activities.

6.14.1.1.3 Eagle and raptor stick nest surveys

A ground-based stick nest survey of larger nests that could be potential eagle and raptor nests was completed by the Applicants in May 2023. The Applicants coordinated with NDGFD to share historic eagle nest locations within the Survey Area and results of the May 2023 survey. The 2023 survey was conducted within the Initial Project Study Area of approximately 14 miles in width and approximately 80 miles in length prior to aRoute or Corridor being identified. The May 2023 survey resulted in a total of 13 stick nests identified within the May 2023 Survey Area. There were 9 nests identified as occupied/active by bald eagles and no nests occupied by golden eagles. No large stick

nests that were observed are located within the Corridor, as selection of the Corridor and Route (Section 3.0) took avoidance of eagle nests into consideration during siting. Therefore, based on this May 2023 survey, the nearest active eagle nest is located approximately 3,186 feet or 0.6 miles from the edge of the Corridor.

Additional large stick nest surveys will be completed prior to construction based on USFWS recommendations. See further discussion below in 6.14.2, Mitigation.

6.14.1.2 Sharp-tailed grouse

Sharp-tailed grouse (*Tympanuchus phasianellus*) are relatively common and are hunted for sport. However, due to recent declines in population, sharp-tailed grouse are listed as a Level I Species of Conservation Priority by NDGFD. They prefer unbroken mixed-grass prairies, which are used for breeding season. During breeding season, the sharp-tailed grouse forms leks, or a dancing ground, to attract mates.

Following consultation and communications with NDGFD, a ground-based sharp-tailed grouse lek survey was completed within a Survey Area of 1 mile on either side of the Route between April and May 2024 (2 miles wide total). The objective of this lek survey was to identify and plan for avoidance of impacts to occupied breeding habitat. The 2024 lek survey resulted in 6 confirmed active leks within the Survey Area. Among these confirmed active leks, none of active leks identified are located within the Corridor.

Additional sharp-tailed grouse lek surveys will be completed prior to construction based on NDGFD recommendations. See further discussion below in 6.14.2, Mitigation.

6.14.1.3 Bat species

There are 11 species of bats known to occur in North Dakota (Nelson et. al 2015). The only federally listed bat species with potential to occur in the Study Area is the NLEB (*Myotis septrionalis*), which is listed as endangered. A desktop analysis and subsequent field habitat evaluation was completed within the Corridor between May and November 2024. There are approximately 3.3 acres of field-verified suitable habitat for bats within the Corridor. Additionally, there are 1.2 acres of forested habitat within the Corridor that will need to be surveyed, once access is available, to determine if it is suitable for bats.

USFWS proposed listing the tricolored bat (*Perimyotis subflavus*) as an endangered species in September 2022. Although the known range of tricoored bat extends into the southeast corner of North Dakota, the Project lies outside of the species' range (USFWS 2022).

There is limited forested habitat within the Corridor (see Section 6.13 Vegetation) most of it dispersed across the entirety of the Project. For more-detailed discussion on resources, impacts, and mitigation for NLEB, see Section 6.15 - Rare and unique natural resources.

6.14.2 Wildlife impacts/mitigation

6.14.2.1 Avian species

Temporary and permanent impacts to avian species are anticipated to be minimal. No significant impacts to eagles and large stick nests are anticipated because the Applicants have sited the Corridor and Route away from known large stick nests. Eagle and raptor stick nest surveys will be conducted in the spring prior to the start of an active construction year. If a new nest within a USFWS-designated buffer of the Corridor is found, active construction will be avoided in that area during the specific species nesting season, as determined in coordination with USFWS, or until the nest is abandoned.

Temporary impacts to migratory birds will be limited to construction activities and minimized and avoided by conducting a clearing search for nesting migratory bird species, with an emphasis on grassland nesting species during the primary nesting season, and no more than 7 days prior to construction activities. If an active nest is identified, construction activities will not commence within a minimum buffer, to be determined in consultation with USFWS, around the active nest to avoid impacts to nesting migratory birds. The buffer will be maintained until the nest is verified as abandoned, as determined with USFWS approval, or the migratory bird nesting season ends.

Permanent impacts to avian species will be minimized by the Applicants incorporating relevant Avian Power Line Infrastructure Committee (APLIC) suggested practices throughout construction, operation, and maintenance of the Project to minimize and mitigate potential impacts to avian species from collision with conductor wire and electrocution (APLIC 2012). The Applicants will develop a Line Marking Plan that will analyze the Route and determine where bird flight diverters should be placed on conductor wire along spans in coordination with USFWS.

6.14.2.2 Sharp-tailed grouse

Temporary and permanent impacts to grasslands suitable for sharp-tailed grouse nesting habitat are anticipated to be minimal. To mitigate potential impacts, seasonal construction restriction dates will be determined in coordination with NDGFD, generally March 15 through May 15, and construction will be limited to designated hours when leks are not active. Additional surveys for sharp-tailed grouse leks will be conducted in the spring prior to the start of an active construction year to identify leks and avoid impacts to them and their breeding habitat. The Applicants will continue to coordinate with NDGFD on the use of perch deterrents as applicable.

6.14.2.3 Bat species

Based on the low amount of forested habitat impacted by the Project, and no known hibernacula within the Corridor, impacts to bat species are anticipated to be negligible. No collision risk associated with the Project is anticipated.

To mitigate potential impacts, tree removal and trimming will occur from November 1 to April 14, outside of the summer roosting period of concern for bats. Based on consultation with the USFWS, if tree removal would need to occur within the April 1 - October 31 time frame, trees greater than 3-inch diameter at breast height would be surveyed for suitable

habitat prior to removal. Additionally, trees which are required to be removed will be replaced at a ratio of 2:1, or more, to increase chances for survival, through coordination with local county soil conservation districts' tree planting programs and in compliance with the Commission's Tree and Shrub Mitigation Specifications.

6.15 Rare and unique natural resources

6.15.1 Description of resources

Many rare and unique natural resources have been avoided through Project routing and siting, as described in Section 3.0. Where consultation has been needed for identifying protected species with potential to occur in the Study Area, the Applicants received concurrence on survey plans with USFWS, USACE and NDGFD. The USFWS administers the Endangered Species Act (ESA), which grants protection for species federally listed as threatened or endangered (T&E) and their associated habitats. An endangered species is one in danger of extinction throughout all or a significant portion of its range. A threatened species is one likely to become endangered in the foreseeable future. Critical habitat for T&E species can be designated if that habitat includes specific areas that are occupied by a species at the time of listing or unoccupied areas that are considered essential to the conservation of a species. Candidate listed species receive no statutory protection from the USFWS until they are formally listed.

Twelve species are federally listed in North Dakota and the USFWS Information for Planning and Conservation (IPaC) tool (USFWS 2024b) indicated that six T&E species could potentially occur within the Corridor. Details on these six T&E species are presented below.

6.15.1.1 Northern long eared bat (*Myotis septentrionalis*)

The Northern Long Eared Bat (NLEB), is a wide-ranging, federally endangered bat species, found in 37 states and 8 provinces in North America, listed as endangered under the ESA in 2022. The species typically overwinters in caves or mines and spends the remainder of the year in forested habitats. As its name suggests, the NLEB is distinguished by its long ears, particularly as compared to other bats in the genus *Myotis* (USFWS 2023b). Although there are many threats to the species, their predominant threat by far is white-nose syndrome. If this disease had not emerged, it is unlikely the NLEB would be experiencing such a dramatic population decline. White-nose syndrome was the main reason for listing the species as threatened under the ESA in 2015. NLEB population numbers, gathered from hibernacula counts, have declined by 97 to 100 percent across the species range (USFWS 2023b).

6.15.1.2 Dakota skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly that lives in high-quality mixed and tallgrass prairie. The species experienced a decline coinciding with the conversion and degradation of its prairie habitat and was listed as threatened under the ESA in 2014. Critical habitat was designated in select counties across Minnesota, North Dakota, and South Dakota on October 1, 2015. The Project is not located within these select counties. A total of 85 to 99 percent of the original tallgrass prairie in the historical range for the Dakota skipper

has been lost. This range once included Illinois and Iowa and now occurs in remnants of native mixed and tallgrass prairie in Minnesota, the Dakotas, and southern Canada. The Dakota skipper may survive in areas where lands have some grazing or haying, and in fact, they are dependent on habitat that experiences periodic disturbance; however, Dakota skippers disappear when these disturbances become too intense (USFWS 2023c).

6.15.1.3 Monarch butterfly (*Danaus plexippus*)

The monarch butterfly (Monarch) is large and brightly colored and has two sets of wings that span three to four inches. Monarch caterpillars, or larvae, have black, yellow, and white stripes and reach lengths of two inches before metamorphosis (UFWS 2023c).

Monarchs are dependent upon flowering plants, and particularly, various species of milkweed. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they only lay eggs on milkweed plants. Native to North and South America, Monarchs have since spread to many other locations where milkweed and suitable temperatures exist, including Australia, New Zealand, and portions of the Iberian Peninsula. For the eastern North American population, most Monarchs overwinter in oyamel fir tree roosts located in mountainous regions in central Mexico (USFWS 2023d).

On December 17, 2020, the USFWS determined that the monarch butterfly warrants protection under the ESA (USFWS 2023j). However, due to higher-priority listing actions, it has been designated as a candidate species rather than being officially listed or proposed for listing under the ESA (USFWS 2024c).

6.15.1.4 Piping plover (*Charadrius melodus*)

The piping plover is a small migratory shorebird that nests and feeds along coastal sand and gravel beaches in North America. Adult breeding plumage includes a single, black breast band, which is often incomplete, and a black bar across the forehead. Primary foraging habitats include sandy mud flats, ephemeral pools, and seasonally emergent seagrass beds with abundant invertebrates (USFWS 2016). On December 11, 1985, the Northern Great Plains population was listed as threatened (USFWS 1986). The USFWS designated critical habitat for the Northern Great Plains breeding population on September 11, 2002 (USFWS 2002).

The greatest threats to piping plover are destruction and modification of reservoirs, channelization of rivers, and modification of river flows. The draft revised recovery plan of 2015 also noted additional negative impacts to piping plover. These include agricultural development, insecticide use (including neonicotinoids), increases in invasive species, and intraspecific aggression that results from increasing densities in population (USFWS 2023e).

6.15.1.5 Rufa red knot (*Calidris canutus rufa*)

The Rufa red knot is a stocky, medium-sized shorebird with a relatively short bill and short legs. The face, prominent stripe above the eye, breast, and upper belly are a rich rufous-red with few scattered light-colored feathers mixed in (USFWS 2023f). Traveling more than 9,300 miles from south to north each spring and repeating the trip in reverse

each autumn, the Rufa red knot is one of the longest-distance migrants in the animal kingdom (USFWS 2023f).

6.15.1.6 Whooping crane (*Grus americana*)

The whooping crane is North America's tallest bird standing approximately five feet tall with a wingspan of more than seven feet. Adult plumage is a snowy white with black primary feathers on their wings and a vivid crimson crown. Whooping cranes utilize a wide variety of habitats during breeding, migration, and foraging. Coastal marshes and estuaries, inland marshes, salt marshes, and sand or tidal flats are common areas for wintering whooping cranes. During the migration and breeding season in the northern great plains, whooping cranes can be found in lakes and open ponds, seasonal and temporary wetlands, wet meadows, rivers, pastures, and cultivated crop fields (USFWS 2023g, 2023h).

Historically, more than 10,000 whooping cranes once populated North America. Population declines have been caused primarily by shooting individual cranes and by destruction of habitat in the prairies from agricultural development (USFWS 2007). However, strict legal protection, habitat preservation, captive breeding, and international cooperation between Canada and the United States have helped to promote recovery of the species.

6.15.2 Rare and unique natural resources impacts/mitigation

The Applicants have routed and designed the Project to avoid or minimize impacts to rare and unique natural resources to the extent possible. The Study Area is outside of any designated critical habitat and data on potential habitat for the species listed below was collected. The Applicants coordinated with USFWS and NDGFD on the appropriate scope and level of survey. Desktop studies were completed for the entire Project and the Applicants have completed field surveys where the Applicants had right to enter properties. Where the right of entry was not granted, desktop data has been used to inform siting of structures. This approach was done in coordination and agreed upon with USFWS. Impacts were avoided to the extent practical.

6.15.2.1 Northern long eared bat (*Myotis septentrionalis*)

No temporary or permanent impacts are anticipated to the Northern long eared bat. Based on the low amount of forested habitat impacted by the Project, and no known hibernacula within the Corridor, impacts to bat species are anticipated to be negligible. There are no known designated critical habitat or hibernacula for NLEB in North Dakota. Due to the limited potential summer roosting habitat within the Corridor and mitigation to remove trees outside of the roosting/maternity season, the short migration periods, and no known hibernacula in North Dakota, no impacts to NLEB are anticipated. Furthermore, the species is unlikely to collide with the transmission line during the brief spring and fall migration periods. Nonetheless, the Applicants will avoid potential summer roosting/maternity habitat for NLEB to the extent feasible by limiting the period of tree removal to the suggested tree removal period from November 1 to April 14, outside of the roosting period of concern for the NLEB, following coordination with USFWS.

Additionally, tree and shrub removal and replacement will occur in compliance with the Commission's Tree and Shrub Mitigation Specifications.

6.15.2.2 Dakota skipper (*Hesperia dacotae*)

No temporary or permanent impacts are anticipated to the Dakota skipper. There is no designated critical habitat for the Dakota skipper located within the Study Area and the closest critical habitat is approximately 50 miles east of the Corridor. There is approximately 4.1 acres of field-verified suitable reproductive habitat for the Dakota skipper located within the Study Area. There are 3.8 additional acres within the Corridor that will need to be surveyed, once access is available, to determine if it is suitable Dakota skipper reproductive habitat. The Project has been sited to avoid temporary and permanent impacts to identified suitable Dakota skipper reproductive habitat within the Corridor. In areas where suitable Dakota skipper reproductive habitat features are within the Corridor and near temporary construction impact areas such as structure work pads and access roads, BMPs such as temporary fencing, flagging, and signage to communicate these environmentally sensitive areas to construction personnel will be installed.

6.15.2.3 Monarch butterfly (*Danaus Plexippus*)

Temporary impacts are anticipated to be negligible and no permanent impacts to monarch butterfly suitable habitat are anticipated. As the monarch butterfly is a candidate species, there is no designated critical habitat. It is anticipated that Project infrastructure will temporarily impact 0.5 acres of suitable monarch butterfly habitat and will have no permanent impact to suitable monarch habitat. Additionally, the 4.1 acres of suitable reproductive DASK habitat which may also be suitable for monarch butterfly will have no permanent impact. In areas where suitable monarch butterfly habitat features are within the Corridor and near temporary construction impact areas such as structure work pads and access roads, BMPs such as temporary fencing, flagging, and signage to communicate these environmentally sensitive areas to construction personnel will be installed.

6.15.2.4 Piping plover (*Charadrius melodus*)

No temporary or permanent impacts to piping plover are anticipated. The closest designated critical habitat for the piping plover is located approximately 10 miles from the Corridor within Arrowwood NWR. No potential Piping plover habitat was identified within the Corridor during a habitat evaluation conducted between May and November 2024; and there were no incidental observations of Piping plover during habitat evaluations and other field studies. Regardless, the Applicants will incorporate relevant APLIC suggested practices for reducing avian impacts from collisions, including Piping plover. See further detail below under Whooping crane.

6.15.2.5 Rufa red knot (*Calidris canutus rufa*)

No temporary or permanent impacts to Rufa red knot are anticipated. Rufa red knot are a rare occurrence in North Dakota and lack available habitat within the Corridor. Furthermore, there is no designated critical habitat in North Dakota and no known stopover habitat for the Rufa red knot within the Corridor. There were no incidental observations of Rufa red knots during habitat evaluations conducted by the Applicants

between May and November 2024. Regardless, the Applicants will incorporate relevant APLIC suggested practices for reducing avian impacts, including Rufa red knot. See further detail below under Whooping crane.

6.15.2.6 Whooping crane (*Grus americana*)

No temporary or permanent impacts to the whooping crane are anticipated. The Project is located approximately 53 miles from the eastern edge of the 95 percent whooping crane migration corridor (USGS 2018). Habitat evaluations were completed within the Corridor between May and November 2024 and there were no incidental observations of whooping crane during habitat evaluations. However, there is potential whooping crane stopover habitat within the Corridor, as discussed further in the Habitat Evaluation Report (Appendix K).

To reduce the risk of potential avian collisions, the Applicant's will incorporate relevant APLIC suggested practices through the design, construction, operation, and maintenance of the Project. The Applicants, in coordination with USFWS, will develop a Line Marking Plan that will analyze the Project and determine where bird flight diverters should be placed along structure spans to provide visibility and minimize collision risk for whooping crane and other avian species.

6.16 Summary of route impacts and minimization and mitigation measures

The Applicants have routed and designed the Project to avoid or minimize impacts to identified resources in the Corridor. Additionally, the Applicants will implement certain measures to avoid, minimize, and/or mitigate potential impacts due to temporary construction activities and long-term Project infrastructure. A summary of potential impacts, avoidance, minimization, and mitigation measures is presented in Table 6.16-1.

Table 6.16-1. Summary of potential impacts and proposed mitigation measures

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
6.1 Socioeconomics	Stutsman, LaMoure, and Dickey Counties Economics	The Project will have positive economic impacts for the local population, including easement payments for participating landowners, employment, and property and sales tax revenue.	• No mitigation is proposed
	Agriculture and farming	Temporary and permanent impacts to agriculture and farming socioeconomics from the Project are anticipated to be negligible.	• Landowner compensation from easements agreements • Land use in the Corridor is primarily agriculture and is not expected to change as a result of the Project. • Siting of structures in collaboration with landowners • Landowners will be made whole by the Applicants if damages to fences, gates, or drain tiles occur • Landowners will be compensated for loss of crops, damage to crops, or other damage
	Tourism	No temporary or permanent impacts to tourism resources are anticipated.	• No mitigation is proposed
6.2 Land use	Agriculture	Land use in the Corridor is primarily agriculture and is not expected to change as a result of the Project. Temporary and permanent impacts to agricultural land use from the Project are anticipated to be negligible.	• Siting of structures in collaboration with landowners • Landowners will be made whole by the Applicants if damages to fences, gates, or drain tiles occur • Landowners will be compensated for easement agreements as well as loss of crops, damage to crops, or other damage
	Existing infrastructure	Transmission lines, natural gas pipelines, railroad crossings and roadways are present within the Corridor. No temporary or permanent impacts on existing infrastructure are anticipated.	• Infrastructure crossings will be coordinated with the applicable agency and spanned with safety precautions in place • North Dakota One Call will be used for foundation construction to avoid buried natural gas pipelines, electric lines, and any other potentially buried infrastructure

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
	Mining Resources	The Corridor crosses one sand and gravel pit. No temporary or permanent impacts on mining operations are anticipated from the Project.	• The Applicants have coordinated with the landowner on structure placement near the sand and gravel pit to avoid impacts to current and future operations of the pit
	Conservation areas	The Corridor includes USFWS wetlands easement areas. There are two Aquatic Habitat Program (Save Our Lakes) easements through NDGFD within the Corridor. No temporary or permanent impacts to conservation areas are anticipated.	• No structures or temporary disturbances are planned within the boundaries within the USFWS wetland easement parcels • Training will be implemented to further communicate avoidance of wetlands within USFWS wetland easements • NDGFD has expressed that it does not have concerns with placing structures within the Save Our Lakes easements, however, Applicants will continue to coordinate with NDGFD as needed
	State trust lands	There are NDDTL Mineral Trust parcels within the Corridor. There are no NDDTL Surface Trust parcels within the Corridor. No temporary or permanent impacts are anticipated.	• No mitigation is proposed
6.3 Public Services	Airports	No commercial airports or private airstrips are present within the Corridor. No temporary or permanent impacts to airport navigational aids, weather observation station facilities, airspace, or glide slope intercept for public airports are expected in the Corridor.	• The Applicants will submit the transmission structures for aeronautical study and FAA Determinations of No Hazard prior to construction, as needed, and will comply with applicable requirements for pre- and post-construction FAA submittals • The Applicants will continue to consult with the NDAERO and the FAA to assess potential impacts of the Project and follow their guidance regarding notifications to airports and the usage of safety markings or

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
			equipment, if required by each agency
	Electric Service	The Project is anticipated to cross electric service infrastructure throughout the Corridor. No temporary or permanent impacts on electrical services are anticipated.	• Agreements and coordination with other utilities will continue to ensure safe crossings, as needed • Applicants will develop an Emergency Response Plan in the rare event damage to electric service infrastructure occurs
	Roads and traffic	Roads near the Project include I-94, U.S. Highway 281, ND 13, ND 20, ND 46 as well as county and township roads. No temporary or permanent impacts are anticipated. During construction, temporary delays may occur as the transmission line is being strung across a roadway.	• Temporary guard structures or traffic control plans may be utilized as necessary while stringing conductor to minimize traffic delays and provide safeguards for the public • Access permits will be acquired from the NDDOT if an access point is needed for I-94, U.S. Highway 281, or ND 13, ND 20, or ND 46 • The Applicants will coordinate with the Counties and Townships to minimize impacts to their roads
	Water supply	During construction water may be needed for dust suppression, dewatering, or concrete washouts. No impacts to local water supply are anticipated.	• The Applicants will consult with local agencies to obtain the appropriate permits and/or approvals for temporary use of water during construction, as necessary
	Communications	A communication tower owned by Otter Tail Power Company at the Jamestown Substation would be relocated. No temporary or permanent impacts to communications are anticipated.	• If interferences to telecommunications occur, the Applicants will work with the applicable communication provider and effected residents to resolve the issue
6.4 Human health and safety	Electric and magnetic fields	EMFs associated with the Project are anticipated to be similar to other existing 345-kV transmission lines and substations. The EMF associated with a HVTL surrounds the conductor and decreases rapidly with increasing distance from the	• No mitigation is proposed

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
		conductor. No impacts to human health and safety from EMFs are anticipated.	
	Induced voltage	Induced voltage from capacitive coupling is not anticipated to occur with the exception of electric fences and fences supported on wood posts.	• The Project will be designed to meet or exceed NESC clearances such that induced are minimized • Applicants will plan to ground all existing fixed objects as needed, such as a fence or other large permanent conductive objects close to or parallel to the Route • To the extent that landowners have concerns following the construction of the Project, the Applicants will work with landowners on a case-by-case basis to mitigate concerns
	Stray voltage	Transmission lines do not create stray voltage as they do not connect directly to buildings, therefore, stray voltage is not anticipated.	• No mitigation is proposed
	Hazardous waste	Hazardous waste from industrial or commercial activities are not likely to be present in the Study Area. No temporary or permanent impacts from hazardous waste are anticipated.	• No mitigation is proposed
	Air quality	The Study Area is currently in attainment for both NAAQS and North Dakota Ambient Air Quality Standards. No permanent impacts on air quality due to the operation of the Project are anticipated and temporary impacts, due to dust during construction, are expected to be negligible.	• Applicants will implement a dust mitigation plan
6.5 Noise	Construction noise	Construction will be temporary in nature and impacts from construction noise will be temporary and intermittent.	• Work during daytime hours
	Operational noise	Temporary and permanent impacts from operational noise are anticipated to be negligible given the low volume of the noise and distance from occupied homes and therefore, no mitigation is proposed.	• No mitigation is proposed

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
6.6 Visual	Visual	Permanent visual and aesthetic impacts are anticipated to be similar to what exists currently.	• Siting of structure placement in collaboration with landowners • Transmission structure designs will be uniform to the extent practicable • Use of self-weathering Corten steel to reduce reflections from sunlight • Care will be used to preserve the natural landscape; construction and operation will be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings
6.7 Cultural and archeological resources	Cultural and archeological resources	No permanent or temporary impacts to cultural and archaeological resources are anticipated, Potential impacts caused by an unanticipated discovery will be minimized in accordance with the Unanticipated Discoveries Plan.	• BMPs and buffers will be applied to around known NRHP-eligible historic properties, unevaluated cultural resources, or Tribal and Cultural Heritage Resources • Archaeological and/or Tribal monitors may be present in areas of sensitivities • An Unanticipated Discoveries Plan has been developed
6.8 Recreational resources	Federal, state, and local recreation lands	No impacts to federal, state, and local recreation lands, including PLOTS and USFWS wetland easements, and their indirect recreational uses are anticipated.	• No structures or temporary disturbances are planned within the boundaries of USFWS wetland easements • Training will be implemented to further communicate avoidance of wetlands within USFWS wetland easements
	Trails and scenic byways	No trails (public hiking, historic, or scenic) or scenic byways are located within the Corridor and, therefore, no impacts are anticipated.	• No mitigation is proposed
	Other recreational resources	Surface waters within the Corridor may be seasonally used for fishing. However, there are no public boat launches or known fishing docks within the Corridor. No additional designated recreational resources, such as boat landings, golf courses, playgrounds, or ball fields are located	• No mitigation is proposed

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
		within the Corridor. No impacts to other recreational resources are anticipated.	
6.9 Soils	Soils	Permanent impacts to soils will be negligible and temporary impacts to soils will be mitigated with BMPs.	• Topsoil and subsoil segregation • A SWPPP will be developed with BMPs to avoid compaction, erosion and control sediment runoff during construction • Soils temporarily disturbed will be restored to preconstruction contours and vegetation to the extent practical
6.10 Geologic and groundwater resources	Geologic and groundwater resources	No permanent impacts to geologic or groundwater resources are anticipated. Temporary impacts may occur but are anticipated to be short-term and negligible.	• Structures have been sited with a buffer to avoid a historic landslide area • Geotechnical soil borings investigations will be conducted prior to construction
6.11 Surface water and floodplain resources	Surface water and floodplain resources	Temporary impacts on surface waters are anticipated but will be limited to construction activities and will be minimized by implementing BMPs that will reduce the potential for sediment to reach adjacent surface waters. Permanent impacts on surface waters are not anticipated.	• A SWPPP will be developed with BMPs to avoid erosion and sediment runoff into surface waters during construction as well as spill containment, clean-up and reporting they occur • A Section 10 Permit for the James River crossing will be acquired prior to work over the river
6.12 Wetlands	Wetlands	Temporary and permanent impacts to wetlands have been avoided to the extent practical but are anticipated.	• A SWPPP will be developed with BMPs to avoid erosion and sediment runoff into wetlands during construction as well as spill containment, clean-up and reporting if a spill occurs • A Section 404 permit will be acquired prior to impacts to wetlands
6.13 Vegetation	Land cover	Land cover in the Corridor is primarily agriculture and is not expected to change as a result of the Project. Land cover types with temporary and permanent impacts include mostly agriculture and wetlands. Other land types have negligible	• Siting of structures in collaboration with landowners • Landowners will be compensated for easement agreements, loss of crops, damage to crops, or other damage

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
		temporary impacts given the small amount. Impacts and mitigation to agriculture, including cultivated cropland, are discussed in Section 6.2.2.1. Impacts and mitigation to wetlands are discussed in Section 6.12.2.	• A SWPPP will be developed with BMPs to avoid erosion and sediment runoff into wetlands during construction as well as spill containment, clean-up and reporting if a spill occurs • A Section 404 permit will be acquired prior to impacts to wetlands as applicable
	Unbroken grasslands	Temporary and permanent impacts to unbroken grasslands have been avoided to the extent practicable.	• Areas temporarily disturbed by construction activities will be re-seeded to native vegetation • Ongoing coordination with USFWS and NDGFD
	Noxious weeds	No permanent impacts from noxious weeds are anticipated and temporary impacts will be avoided but if they occur, will be mitigated.	• Applicants have developed a Vegetation Management Plan • Prior to beginning construction activities within the Corridor, construction equipment and vehicles will be cleaned to prevent the spread of noxious and invasive weeds • Applicants have contacted respective County Weed Boards and additional coordination will occur as applicable
	Trees and Shrubs	The permanent removal of trees is anticipated for safe construction and operation of the Project.	• Applicants will replace trees using the Commission's Tree and Shrub Mitigation Specification 2:1 ratio, or more
6.14 Wildlife	Avian species	Temporary and permanent impacts to avian species are anticipated to be minimal with mitigation.	• Stick nest surveys will be completed prior to the start of an active construction year • Migratory bird clearing searches will be conducted no more than 7 days prior to construction activities • A Line Marking Plan will be developed in coordination with USFWS
	Sharp-tailed grouse	Temporary and permanent impacts to grasslands suitable for sharp-tailed grouse nesting habitat will be minimal in nature.	• Lek surveys will be conducted in the spring prior to the start of an active construction year

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
			• Seasonal construction restriction dates and hours will be determined in coordination with NDGFD • The Applicants will continue to coordinate with NDGFD on use of perch deterrents, as applicable
	Bat species	Based on the low amount of forested habitat impacted by the Project, and no known hibernacula within the Corridor, impacts to bat species are anticipated to be negligible.	• Tree removal and trimming will occur outside of the summer roosting period • Applicants will replace trees using the Commission's Tree and Shrub Mitigation Specification 2:1 ratio, or more
6.15 Rare and unique natural resources	Northern long eared bat	Based on the low amount of forested habitat impacted by the Project, and no known hibernacula within the Corridor, impacts to bat species are anticipated to be negligible.	• Tree removal and trimming will occur outside of the summer roosting period • Applicants will replace trees using the Commission's Tree and Shrub Mitigation Specification 2:1 ratio, or more
	Dakota skipper	There is no designated critical habitat for the Dakota skipper located within the Study Area and the closest critical habitat is approximately 50 miles east of the Corridor. No temporary or permanent impacts are anticipated to the Dakota skipper.	• Work areas near potential habitat will be flagged and signage will be used to communicate avoidance
	Monarch butterfly	As the monarch butterfly is a candidate species, there is no designated critical habitat. No permanent impacts to monarch butterflies are anticipated and temporary impacts are anticipated to be negligible.	• Work areas near potential habitat will be flagged and signage will be used to communicate avoidance
	Piping plover	The closest designated critical habitat for the piping plover is located approximately 10 miles from the Corridor within Arrowwood NWR. No potential Piping plover habitat was identified within the Corridor and there were no incidental observations were made during surveys. No temporary or permanent impacts to piping plover are anticipated.	• The Applicants will incorporate relevant APLIC suggested practices for reducing avian impacts from collisions • A Line Marking Plan will be developed

Resource		Summary Impacts	Summary Mitigation/Minimization Measures
	Rufa red knot	Rufa red knot are a rare occurrence in North Dakota and lack available habitat within the Corridor. There is no designated critical habitat in North Dakota and no known stopover habitat for the Rufa red knot within the Corridor. No incidental observations were made during survey. No temporary or permanent impacts to Rufa red knot are anticipated.	• The Applicants will incorporate relevant APLIC suggested practices for reducing avian impacts from collisions • A Line Marking Plan will be developed
	Whooping crane	The Project is located approximately 53 miles from the eastern edge of the 95 percent whooping crane migration corridor. No incidental observations were made during survey, however there is potential stopover habitat within the Corridor. No temporary or permanent impacts to the whooping crane are anticipated.	• The Applicants will incorporate relevant APLIC suggested practices for reducing avian impacts from collisions • A Line Marking Plan will be developed

7.0 Public and agency coordination

7.1 Coordination summary

Since the early planning stages of the Project, the Applicants have been gathering feedback from federal, state, and local agencies, and the public regarding routing constraints and opportunities, significant natural and cultural features, permitting requirements, river crossing points, and other routing and siting considerations (as detailed in Section 3.0). The initial public and agency coordination efforts were designed to assist the Applicants with identifying the best possible Route for the Project.

A Request for Information letter was sent to federal, state, and local agencies, as well as stakeholders in March 2023, including the entities in NDAC Section 69-06-01-05. A Request for Input letter was also sent to 15 Tribes in March 2023. In September 2023, an update on the Project with a Request for Information and Meeting Letter was distributed to federal, state, and local agencies, Tribes, and stakeholders. A list of entities that received a March 2023 and September 2023 mailings and whether responses and ongoing communications occurred are summarized in Table 7.1-1 below.

As routing and siting progressed and was refined to the current Corridor and Route, the Applicants met directly with specific state and federal agencies, county boards, and townships with vested interest and/or jurisdictional lands within the Corridor and Route and solicited feedback on the Project. The Applicants also conducted two rounds of public open house meetings to collect feedback from landowners and interested stakeholders (public outreach is summarized in Table 7.2-1). Input and feedback from agencies, stakeholders, and the public were reviewed and considered as the Applicants refined the Project's Corridor and Route.

Sections 7.2, 7.3, and 7.4 further discuss the outreach through public open house meetings, federal and state agency, and Tribal outreach, and local agency outreach, respectively. Additionally, Appendix E contains copies of federal and state agency and Tribal correspondences, Appendix L contains material presented at Public Open House Meetings, and Appendix M contains details on Local correspondences.

As the Project progresses and moves into construction, the Applicants will continue to notify the public, agencies, and stakeholders of Project milestones through Project completion.

Table 7.1-1. Agency mailings

Date	Action	Agency	Response Received
Federal			
March 22, 2023, and September 6, 2023	Request for Information letter mailed out to Federal Agencies (March 2023) and Second request for Input and Meeting	Federal Aviation Administration (FAA)	No
		Federal Highway Administration (FHA)	No
		Grand Forks Air Force Base (AFB)	No
		Military Aviation and Installation Assurance Siting Clearinghouse (MAIASC)	**Yes**
		Minot Air Force Base (AFB)/20th Air Force 91st Missile Wing	No

Date	Action	Agency	Response Received
	request (September 2023)	U.S. Army Corps of Engineers (USACE)	**Yes**
		U.S. Bureau of Reclamation (USBR)	**Yes**
		U.S. Bureau of Land Management (BLM)	**Yes**
		U.S. Department of Agriculture (USDA) Farm Service Agency (FSA)	**Yes**
		U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS)	No
		U.S. Department of Defense (DOD)	No
		U.S. Fish and Wildlife Services (USFWS)	**Yes**
		U.S. Geological Survey	No
		Western Area Power Administration (WAPA)	**Yes**
Federal Agencies - Ongoing additional correspondences		Multiple email correspondences and agency meetings were held with USFWS. See section 7.3.1 and also Appendix E for details.	
		Multiple email correspondences and agency meetings were held with USACE. See section 7.3.2 and also Appendix E for details.	
State			
March 22, 2023, and September 6, 2023	Request for Information letter mailed out to State Agencies (March 2023) and Second request for Input and Meeting request (September 2023)	Job Service of ND	No
		ND Aeronautics Commission	**Yes**
		ND Attorney General	No
		ND Department of Agriculture	No
		ND Department of Career and Technical Education	No
		ND Department of Commerce	**Yes**
		ND Department of Environmental Quality	No
		ND Department of Health	No
		ND Department of Transportation	No
		ND Department of Trust Lands	**Yes**
		ND Department of Water Resources[15]	**Yes**
		ND Energy Infrastructure & Impact Office	No
		ND Forest Service	No
		ND Game and Fish Department	**Yes**
		ND Geological Survey	**Yes**
		ND Health and Human Services	No
		ND Indian Affairs Committee	No
		ND Industrial Committee	No
		ND Labor and Human Rights	No
		ND Parks and Recreation Department	**Yes**
		ND Pipeline Authority	No
		ND Transmission Authority	**Yes**
		State Historic Society of North Dakota (SHSND)/ ND State Historic Preservation Office (NDSHPO)	**Yes**
		State of North Dakota Governor's Office	No
State Agencies - Ongoing additional correspondences		Multiple email correspondences and agency meetings were held with NDGFD. See section 7.3.3 and also Appendix E for details.	
		Multiple email correspondences and agency meetings were held with NDSHPO. See section 7.3.4 and also Appendix E for details.	

[15] The NDDWR is formerly known as the "State Water Commission". The agency's name was changed in 2021. Within NDAC 69-06-01-05, NDDWR is still referred to as the State Water Commission, however, the current name is used here

Date	Action	Agency	Response Received
Local			
March 22, 2023, and September 6, 2023	Request for Information letter mailed out to Counties, Townships, and Municipalities (March 2023) and Second request for Input and Meeting request (September 2023)	Dickey County	No
		LaMoure County	No
		Stutsman County	No
		City of Edgeley	No
		City of Ellendale	No
		City of Jamestown	No
		City of Montpelier	No
		Adrian Township	**Yes**
		Albion Township	No
		Ashland Township	No
		Badger Township	No
		Bloom Township	No
		Brimer Township	No
		Buchanan Township	**Yes**
		Corwin Township	No
		Elden Township	No
		Ellendale Township	No
		Elm Township	No
		Fried Township	No
		Glenmore Township	No
		Golden Glen Township	No
		Gray Township	No
		Hamburg Township	No
		Henrietta Township	No
		Homer Township	No
		Jim River Valley Township	No
		Kennison Township	No
		Kentner Township	No
		Keystone Township	No
		Manns Township	No
		Maple Township	No
		Midway Township	No
		Montpelier Township	No
		Nora Township	No
		Porter Township	No
		Potsdam Township	No
		Roscoe Township	No
		Rose Township	No
		Russell Township	No
		Saratoga Township	No
		Severn Township	No
		Spiritwood Township	**Yes**
		Sydney Township	No
		Valley Township	**Yes**
		Van Meter Township	No

Date	Action	Agency	Response Received
		Wano Township	No
		Willowbank Township	No
		Winfield Township	No
		Woodbury Township	No
		Ypsilanti Township	No
Local – Ongoing additional correspondences with Counties and Townships		Multiple email correspondences and meetings have been held and attended with Dickey County, LaMoure County, Stutsman County, and Townships crossed by the Project Corridor. See section 7.4 and Appendix M for details.	
Tribal			
March 31, 2023, and September 6, 2023	Request for Input letter mailed out to tribes (March 2023) and Second request for Input and Meeting request (September 2023)	Apache Tribe of Oklahoma	No
		Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota	No
		Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota	No
		Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	No
		Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota	No
		Mandan, Hidatsa, & Arikara Nation (Three Affiliated Tribes)	No
		Oglala Sioux Tribe	No
		Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota	No
		Santee Sioux Nation, Nebraska	No
		Standing Rock Sioux Tribe	No
		Sisseton-Wahpeton Oyate Nation	**Yes**
		Spirit Lake Nation	No
		Turtle Mountain Band of Chippewa Indians	No
		Lower Sioux Indian Community	No
		Prairie Island Indian Community	No
June 27, 2023	Project meeting update	Sisseton-Wahpeton Oyate	
Tribal - Ongoing additional correspondences		The Applicants have had ongoing communications and collaboration with Sisseton-Wahpeton Oyate Nation on cultural resource surveys including having the Tribe present during those surveys. See Appendix E for details.	

7.2 Public and stakeholder outreach

The Applicants identified the importance of keeping the public and stakeholders informed about the Project status throughout the Route development process early on. A public outreach program was developed and implemented to provide education and comment opportunities for landowners, agencies, and non-government organizations. A summary of public outreach activities is provided in Table 7.2-1. Materials used for outreach, including notifications, information boards and handouts presented at the public open house meetings are included in Appendix L.

The Applicants used several communication channels during the Route development process, including direct communication with landowners via physical mailings and land agent outreach, developed and hosted a Project-specific website (https://www.jamestowntoellendale.com/), set up and hosted a Project-specific information phone line (888-794-6243), and created and communicated through a Project-specific email address (connect@jamestowntoellendale.com). Each of these communication channels will be used throughout the duration of the Project for the public and stakeholders to continue to have open, two-way communication with the Applicants.

In addition to agencies, the Applicants also sent letters requesting feedback on the project to non-agency stakeholders in March 2023.

Table 7.2-1. Public and agency coordination

Year	Month	Action
2023	March	• Mass mailing letters were sent out to known stakeholders
	May	• Notification letter for open house meetings mailed. • Paid newspaper advertisements for June 2023 open house meetings.
	June-July	• Project website and toll-free Project information line was made available to the public in June 2023. • Notification letters for June and July 2023 open house meetings mailed. • Paid newspaper advertisements and social media posts advertising for June and July 2023 open houses. • Open house meetings in Edgeley, Ellendale, and Jamestown, North Dakota, between June 13 and June 15 and in Edgeley and Ellendale, North Dakota, July 24 and July 25.
	August	• Notification letters for September 2023 open house meetings mailed. • Paid newspaper advertisements and social media posts advertising September 2023 open house meetings.
	September	• Open house meetings in Edgeley, Ellendale, and Jamestown, North Dakota, between September 12 and 14. • A second mass mailing letter was sent out to known stakeholders
2024	August	• Mailed notification letters for website and Project updates. • Email blast about project updates on website
	September	• Mailed postcard update sharing anticipated route and where to review a detailed map. • Email blast and postcard about pre-filing updates.
	December	• Email blast and postcard with a Happy Holidays message from the JETx Team.

7.2.1 Public open house meetings

The Applicants hosted two rounds of public open house meetings during the route development process to gather input from the public on the Project and help refine the Initial Project Study Area into the current Route:

- First Round - June 13, 14 and 15, 2023 and July 24 and 25, 2023: Five public open house meetings in total were held in three communities with a total of 95 attendees, as described below.

- Second Round - September 12, 2023 – September 14, 2023: Three public open house meetings in total were held in three communities with a total of 153 attendees, as described below.

From June 13 through July 25, 2023, the Applicants hosted the first round of five open house meetings from 4:00 – 7:00 pm which were held in the following locations: Edgeley, Ellendale, and Jamestown, North Dakota. Meeting locations were selected based on proximity to the Study Area. Meetings were advertised through social media, newspaper ads, and mailers. Notifications were also sent to federal, state, and local agencies and Tribal representatives. The meetings included informational materials including a Project overview handout, Project information boards, a scaled 3-dimensional model of the transmission structure, detailed maps of the Project, and a GIS computer station. Out of the 4,077 open house notifications mailed, a total of 95 citizens attended. The Project team gathered important feedback during this first round of public open house meetings that was used in refining the initial study area.

From September 12, 2023, through September 14, 2023, the Applicants hosted a second round of public open house meetings from 3:00 to 6:00 pm in the following locations: Edgeley, Ellendale, and Jamestown, North Dakota. Meeting locations were selected based on proximity to the Route. The open house meetings focused on sharing a preliminary corridor with landowners for route refinement feedback. Each meeting included a Project overview handout, Project information boards, a scaled 3-dimensional model of the transmission structure, detailed maps of the Project, and a GIS computer station. Out of the 4,283 open house notifications mailed, a total of 153 citizens attended. The Project team gathered important feedback during this second round of public open house meetings.

Most attendees at the public open house meetings were interested in learning more about the Project, location information, and the potential impacts to their property. Some of the common questions and themes included structure types, location of structures, easements, and schedule. Information from the public open house meetings is included in Appendix L. All comments collected were reviewed and considered by the Applicants' routing and siting team as the Corridor and Route was refined.

7.3 Federal and state agency outreach

7.3.1 U.S. Fish and Wildlife Service

The Applicant's initial coordination with USFWS began on February 23, 2023, with emails sent to Kulm and Chase Lake WMDs requesting information on USFWS easements and fee title lands in the initial routing Study Area.

USFWS responded on March 2, 2023, with GIS shapefiles and subsequently requested consideration of the Project to avoid T&E species and species of concern, compliance with the Bald and Golden Eagle Act, MBTA, and avoidance of wetlands on USFWS-managed

wetland easements. The Applicants met with USFWS Kulm and Chase Lake WMDs on May 17, 2023, to discuss the Project and USFWS easements within the Study Area.

The Applicants met with USFWS Ecological Services on June 13, 2023, to introduce the Project and discuss potential species and habitat in the Study Area and expectations of surveys and then then met in-person on site on September 12, 2023, to look at areas of potential T&E habitat within a specific area of concern.

On January 16, 2024, the Applicants met with USFWS Ecological Services to provide a Project update and to discuss a field survey plan. A survey and survey reporting plan for T&E species and species of concern was developed (the survey report is included in Appendix K) and concurred with by USFWS on February 7, 2024. Those species included the northern long-eared bat, Dakota skipper, monarch butterfly, piping plover, Rufa red knot, whooping crane, bald and golden eagles, and migratory birds. Section 6.15 and 6.16 discuss the resources, potential impacts, and proposed mitigation of those species' surveys. Wildlife and habitat survey plans and reports are included in Appendix K.

On April 30, 2024, the Applicants provided USFWS with GIS shapefiles of the Corridor and suggested areas of survey opportunities for USFWS to join the Applicant's biologists in the field to verify potentially sensitive habitats. USFWS replied that a meeting in the field would not be necessary and requested ongoing communications as surveys progressed.

The Applicants met with USFWS on September 4, 2024, to discuss route shifts, the results of habitat surveys, mitigation, next steps to completing surveys, and the filing of this Application. Additionally, revised Project shapefiles were provided to USFWS on December 2, 2024, and a Threatened and Endangered Species Habitat Evaluation Report (Appendix K) was submitted to USFWS on December 12, 2024. USFWS Ecological Services responded to the reports on April 4, 2025. Most recently, the Applicants met with USFWS Kulm and Chase Lake WMDs on March 20, 2025 to introduce the Project and activities to-date to new staff including a presentation and follow-up emails with geospatial files. Appendix E includes copies of correspondence with USFWS.

Coordination with USWFS Ecological Services and Kulm and Chase Lake WMDs is ongoing and will continue throughout the duration of the Project as surveys and permitting continues; the Applicants will continue to consult with USFWS throughout the Project duration, as needed.

7.3.2 U.S. Army Corps of Engineers

The Applicant's initial consultation with the USACE began on March 22, 2023, with a request for information letter sent out to several federal, state, and local agencies. USACE responded on April 12, 2023, that a Section 404 Permit may be required for the Project and confirmed that a Section 10 permit for crossing the James River would be required and administered by the North Dakota USACE office. During a meeting on April 18, 2024, USACE concurred with the Applicant's and USFWS's discussions of the survey strategy for preliminary jurisdictional determinations (PJDs) and field delineations and concurred on next steps. An application for concurrence on the wetland delineation and jurisdictional determination for wetlands and other waters within the right-of-way was

submitted in July 2024 and on September 5, 2024, USACE provided a PJD. (see Appendix J).

The Applicants met with USACE on September 4, 2024, to discuss the status of the PJDs, schedule for remaining wetland delineations, and schedule for submitting the Section 10 and Section 404 permit applications, and the filing of this Application. Additionally, a Wetlands Delineation Report (Appendix J) was submitted to USACE on December 11, 2024 and on January 17, 2025 USACE provided a PJD based on the additional surveys (Appendix J). Most recently, the Applicants met with USACE on January 30, 2025, to discuss the PJD and future permitting activities.

Coordination with the USACE North Dakota Office will continue throughout the duration of the Project permitting continues; the Applicants will continue to consult with USACE on Section 404 permitting and the James River Section 10 crossing.

7.3.3 North Dakota Game and Fish Department

The Applicant's initial consultation with NDGFD began on March 22, 2023, with a request for information letter. NDGFD responded on April 14, 2023, and commented that the agency's primary concern is preventing disturbance of native prairie and wooded draws, as maintaining grassland diversity is a conservation priority. NDGFD requested that work in these areas be avoided if possible and that reclamation occur if required. NDGFD suggested marking overhead transmission lines when they are located near streams or large wetland complexes to reduce avian collisions and noted that surveys for raptor nests within one-half mile be conducted prior to construction. General avoidance of wetland impacts was suggested. NDGFD also advised that the Bluestem Prairie WMA in proximity to the Project would require a special use permit if there were impacts to this area. NDGFD stated no significant effects were expected from the Project, provided appropriate recommendations included in the response were followed.

A meeting with NDGFD occurred on February 27, 2024, where the Applicants went over the habitat survey plan developed in consultation with USFWS. NDGFD recommended avoiding unbroken grasslands and native habitat. It was noted that grasslands going through the Project area may prompt a need for lek surveys which was later requested via email. The Applicants developed a plan and NDGFD concurred with the Sharp-Tailed Grouse Lek Survey Plan; surveys were subsequently completed from April through May 2024 (survey reports are included in Appendix K), as discussed in Section 6.14.

The Applicants met with NDGFD on August 27, 2024, to discuss the results of the lek surveys, mitigation, and the filing of this Application. The Applicants also met with NDGFD on October 3, 2024, to discuss a variance for crossing two Save Our Lakes easements. Coordination with NDGFD has continued and remains ongoing throughout the duration of the Project.

7.3.4 North Dakota State Historic Preservation Office

Consultation with the NDSHPO included concurrence with the Applicant's proposed need for a Class I Cultural Resources Literature Review and a Class III Cultural Resource Inventory. The Class I Cultural Resources Literature Review Report was provided to the NDSHPO for their review and comment on February 28, 2024. The NDSHPO provided a

response on April 2, 2024. The Applicants met with the NDSHPO on April 3, 2024, regarding the Class III Cultural Resources Inventory field surveys and reporting scheduled to begin in May 2024. The NDSHPO concurred with the Applicant's survey strategy (Appendix I). The Applicants held a pre-Inventory kickoff call with the NDSHPO on May 2, 2024. The Applicants held a survey status and results summary meeting with the NDSHPO on September 9, 2024, and then again on December 10, 2024, to discuss the Class III reporting requirements. Additional coordination with the NDSHPO regarding Class III reporting requirements and comments on the Class III report was completed by the Applicants via telephone, email, and meetings from January through early July of 2025. Class III Reports for areas where NDSHPO had identified field survey as necessary across areas where survey access was granted by landowners was provided to the NDSHPO on July 29, 2025. Copies of correspondence with the NDSHPO are included in Appendix E. The Applicants will continue to consult and communicate with the NDSHPO regarding their review of the Class III Reports (Volume 1 and 2) and supplemental Class III Cultural Resources Inventory of remaining areas where survey access has not yet been granted.

7.4 Local entity outreach

Letters were mailed out to local entities including counties and townships in the Study Area in the March 2023 Request for Information Letter and again when a Corridor and Route were determined in the September 2023 Input and Meeting Request Letter, included in Appendix M. In addition to the initial outreach mailing and the route determination mailing, the Applicants reached out directly to each applicable County and Township to confirm any requirements for setbacks, crossings, approaches, overhanging ROWs, and permitting.

The Applicants gathered information on zoning regulations, road setback requirements, crossings, approaches, overhanging ROWs, and any permitting needs for each County and Township and answered questions presented by the County Commissioners and Township Boards. . The permitting requirements are summarized in the Identifications of required permits and approvals within Table 8.0-1 in Section 8.0 and the following Section 7.4.1, 7.4.2, and 7.4.3 detail outreach within the three counties and their townships that are crossed by the Project. A summary of local agency correspondence is included with copies of Conditional Use Permits (CUPs) approvals and denials at the time of this filing in Appendix M.

7.4.1 Stutsman County

Stutsman County is zoned for agriculture within the Corridor. Zoning ordinances within Stutsman County currently do not expressly reference electric transmission facilities and historically has not required zoning permits for them. There are eight townships in Stutsman County within the Project Corridor: Bloom, Corwin, Fried, Homer, Montpelier, Rose, Spiritwood, and Winfield Townships. Of those townships in Stutsman County, one of them (Winfield Township) does not currently require zoning permits for the Project. Montpelier Township has relinquished zoning authority to Stutsman County and defers to its zoning requirements. Of the remaining six townships, a CUP has been approved by four of them: Fried, Rose, Bloom, and Spiritwood Townships. Homer and Corwin Townships have denied a CUP for the Project, which is further discussed below in

Section 7.5. Additional documentation and information on correspondences with Stutsman County and the respective townships located within it are included in Appendix M.

The status of zoning permits within Stutsman County and the Townships crossed by the Corridor are summarized in Table 8.0-1 within Section 8.0.

7.4.2 LaMoure County

LaMoure County defers zoning to townships. There are four townships in LaMoure County within the Project Corridor: Adrian, Russell, Wano and Willowbank. Of those townships in LaMoure County, all four are zoned and require zoning permits for the Project. A CUP was approved and obtained by Adrian Township. Russell Township approved a CUP, then revoked the CUP, and subsequently imposed a moratorium on the development of electric transmission facilities. Wano Township denied a CUP for the Project. Willowbank Township denied a CUP for the Project and subsequently enacted a moratorium specifically on the JETx Project. Additional documentation and information on correspondences with LaMoure County and the townships within it are included in Appendix M.

The status of zoning permits within LaMoure County and the Townships crossed by the Corridor are summarized in Table 8.0-1 within Section 8.0.

7.4.3 Dickey County

Dickey County currently has no zoning ordinances for electric transmission facilities. There are four townships in Dickey County within the Project Corridor: Elden, Ellendale, Keystone, and Valley. Of those townships in Dickey County, Ellendale, Keystone and Valley Townships do not currently require zoning permits. Elden Township does require a CUP, which was approved. Additional documentation and information on correspondences with Dickey County and the townships within it are included in Appendix M.

The status of zoning permits within Dickey County and the Townships crossed by the Corridor are summarized in Table 8.0-1 within Section 8.0.

7.5 PSC Preemption Request

In response to the Project, several townships have enacted unreasonably restrictive and arbitrary setbacks, and/or applied existing ordinances in an unreasonably restrictive manner when considering the Project's CUP applications. The Applicants request the PSC find that all local land use and zoning regulations, restrictions, and corresponding permitting requirements of political subdivisions are automatically superseded and preempted by the PSC under NDCC 49-22-16(2)(b), as amended by House Bill 1258 (2025) ("HB 1258") if the Applicants receive PSC route approval. Interpreting language identical to that in NDCC 49-22-16(2)(b), the PSC previously held that local land use and zoning regulations were automatically superseded and preempted. *SCS Carbon Transport LLC* N.D. P.S.C., Case No. PU-22-391 at Dkt. No. 440 (interpreting NDCC 49-22.1-13).

The Applicants initiated their local outreach efforts prior to the effective date of NDCC 49-22-16(2)(b) and continued their local outreach efforts after the passage of HB 1258 in an attempt to coordinate with and obtain approval from local political subdivisions. However, the local land use and zoning regulations and permitting requirements of political subdivisions no longer apply to the Project given the enactment of NDCC 49-22-16(2)(b) if the Applicants receive PSC route approval. A discussion of the Applicants' local outreach and permitting efforts is included in Appendix M of this Application.

Despite NDCC 49-22-16(2)(b) automatically superseding and preempting local ordinances, the Applicants also request the PSC find the local land use and zoning regulations and requirements of the political subdivisions discussed below to be unreasonably restrictive. As applied to the Project Route, the local land use and zoning regulations and requirements are unreasonably restrictive in view of existing technology, factors of cost or economics, needs of consumers regardless of location, and/or under state law.[16]

7.5.1 Willowbank Township (LaMoure County)

On January 22, 2025, Willowbank Township held a hearing on a CUP application for the Project but no decision was made at that time. After the January 22nd CUP hearing, Applicants were provided with a letter from the Township dated February 25, 2025, purporting to deny the CUP. The letter included a list of reasons for which the Township asserts a denial was based. The stated reasons for Willowbank Township's denial of the Applicants' request for a CUP relate to subject matters unrelated to the Project and/or falling outside of the Township's jurisdiction. Willowbank Township listed several reasons as the basis for its denial, including: (1) concerns regarding contractual provisions of easement agreements; (2) items related to the Project's need, including an unfounded belief that the electrical grid is not congested, and the dissenting opinion of Commissioner Christmann in the Project's CPCN proceeding (Case No. PU-24-091); (3) concerns about future projects unrelated to the JETx CUP application; (4) an unfounded belief that the Project will require a new substation and associated costs be burdened upon ratepayers; (5) impacts to bridges and roads; and, (6) alleged impacts to tree rows, among other reasons. This correspondence is located in Appendix M1.

On April 9, 2025, Willowbank voted to deny the Project's CUP. The Applicants have requested minutes from the April 9th meeting to ascertain the stated reasons for the CUP denial. To date, Willowbank Township has not provided its meeting minutes. The last correspondence with Willowbank Township requesting meeting minutes is also located in Appendix M1.

Subsequently, on June 11, 2025, Willowbank adopted a resolution to "install a moratorium on the Jetx transmission line project" and applied it for "[a] period of two

[16] Applicants request the PSC find these local land use and zoning regulations and requirements of the political subdivisions as they have been applied to the Project Route unreasonably restrictive out of an abundance of caution due to the current appeal of the PSC's interpretation of NDCC 49-22.1-13(2) (which language now exists under NDCC 49-22-16(2)) in *SCS Carbon Transport LLC,* N.D. P.S.C., Case No. PU-22-391. *See APH Farms, et al. V. N.D. Pub. Serv. Comm'n et al,* Burleigh County, ND Case No. 08-2024-CV-03622. Applicants believe such a finding is appropriate for the reasons stated below and that an unreasonably restrictive and express preemption finding by the PSC will provide regulatory certainty for the Applicants.

years." Willowbank's moratorium specifically targets the Project. A copy of Willowbank's moratorium resolution is located in Appendix M1.

7.5.2 Wano Township (LaMoure County)

On January 29, 2025, Wano Township held a public hearing on the CUP. No action was taken on the application, but in a letter to the Applicants signed on February 26, 2025, Wano Township stated the CUP had been denied and listed reasons for denial. This correspondence is set forth in Appendix M1. Wano Township's denial appears to be based on four issues that are outside the scope of the township's jurisdiction and do not relate to a CUP proceeding and zoning considerations. Specifically, Wano Township cited to the following reasons as the basis for its denial: (1) concerns regarding contractual provisions of easement agreements; (2) the dissenting opinion of Commissioner Christmann in the Project's CPCN proceeding (Case No. PU-24-091); (3) the opinion that the Project will not benefit local cooperatives and an unreasonable concern that the township was not contacted by MISO; and (4) concerns about future projects unrelated to the JETx CUP application.

Later, at its April 2, 2025, meeting, Wano Township denied the Project's CUP. Wano Township provided draft meeting minutes from the April 2, 2025 meeting on April 28, 2025. The meeting minutes do not expressly identify the Township's basis for the CUP denial. A copy of Wano Township's meeting minutes is located in Appendix M1.

7.5.3 Russell Township (LaMoure County)

The Applicants obtained a CUP for the Project from Russell Township on October 24, 2024. A copy of the CUP is located in Appendix M1. Without any notice to the Applicants, on June 17, 2025, Russell Township purported to revoke the Project's CUP. Also on June 17, 2025, Russell Township imposed a two-year moratorium on electric transmission and other development infrastructure. The moratorium prohibits a wide range of development and is not narrowly tailored to address a specific concern of the Township. Specifically, the moratorium purports to prohibit "Renewable Energy Development, High Voltage Transmission Lines, AI Data and Crypto Mining Centers, Air Carbon Capture Facilities, Carbon Pipelines, Nuclear and or Industrial Waste Disposal Sites and Renewable Energy Battery and Storage Sites." A copy of the moratorium resolution is located in Appendix M1. Moreover, the Township only vaguely states that "changing conditions in our township" justify the wide-ranging moratorium. As a result, the moratorium is arbitrary, overly-broad and unreasonably restrictive.

Russell Township sent a letter to the Applicants dated June 25, 2025, notifying the Applicants of the June 17, 2025 CUP revocation. A copy of the June 25, 2025 correspondence is located in Appendix M1. In this correspondence, the Township relied on a filing by its own attorney in its untimely intervention request submitted in the Project's CPCN Case No. PU-24-091 as the sole basis for revoking the Project's CUP.

7.5.4 Corwin Township (Stutsman County)

In October 2024, Corwin Township asserts to have adopted a 2,640-foot setback from occupied residences to electric transmission lines rated at 115 kV and above unless

waivers are obtained from landowners (the "2,640 ft Setback"). The amendment adopting the 2,640 ft Setback includes a setback of 500-feet from an inhabited rural residence for "[b]elow ground" electric transmission lines. A copy of the 2,640 ft Setback purportedly approved by Corwin Township in October 2024 is included in Appendix M1.

The 2,640 ft Setback impedes the Project's Route because the Route is within 2,640 feet of seven residences located in Corwin Township. Given the difficulty to accommodate the 2,640 ft Setback, the Applicants sought a variance of the setback requirement in their CUP application. However, in an effort to comply with a request from a Township official, Applicants attempted to contact the owners of the seven residences to discuss waivers and seek landowner signatures. The applicable landowners were either non-responsive to the Applicants' inquiries or indicated they would not sign a waiver.

On June 10, 2025, Corwin Township voted to deny the Project's CUP and request for variance from the 2,640 ft Setback. Corwin Township provided meeting minutes from the June 10, 2025 meeting on June 12, 2025, that do not expressly identify the basis for the CUP denial. A copy of Corwin Township's meeting minutes is located in Appendix M1.

7.5.5 Homer Township (Stutsman County)

In November 2024, Homer Township similarly purports to have adopted a 2,640 ft Setback. A copy of the 2,640 ft Setback purportedly approved by Homer Township in November 2024 is included in Appendix M1. The 2,640 ft Setback impedes the Project's Route because the Route is within 2,640 feet of eleven residences within Homer Township. Given the difficulty in complying with the 2,640 ft Setback, the Applicants sought a variance of the setback requirement in their CUP application. However, in a good faith effort to obtain CUP approval, Applicants attempted to contact the owners of the eleven residences to discuss waivers and seek landowner signatures. The applicable landowners were either non-responsive to the Applicants' inquiries or indicated they would not sign a waiver.

On June 17, 2025, Homer Township voted to deny the Project's CUP application and request for variance from the 2,640 ft Setback. On June 18, 2025, the Applicants received a copy of the meeting minutes from the June 17, 2025 meeting. The minutes do not expressly identify the basis for the CUP denial. A copy of Homer Township's meeting minutes is located in Appendix M1.

7.5.6 Basis for Preemption

Local land use and zoning regulations are automatically preempted by PSC route approval under NDCC 49-22-16(2)(b). However, the Applicants also request the PSC find that the local land use and zoning regulations and requirements of the political subdivisions discussed above are unreasonably restrictive. This request is made for regulatory certainty for the JETx Project.[17] As shown below, the local land use and zoning

[17] As noted above, the PSC's order regarding preemption in *SCS Carbon Transport LLC,* N.D. P.S.C., Case No. PU-22-391, is currently on appeal to the district court. *See APH Farms, et al. V. N.D. Pub. Serv. Comm'n et al,* Burleigh County, ND Case No. 08-2024-CV-03622. Applicants' understanding of the appeal is that the parties do not dispute that the PSC has the power to preempt local land use and zoning regulations and requirements, but whether preemption is automatic or requires a finding that the

regulations summarized in this Section 7.5 are unreasonably restrictive in view of existing technology, factors of cost or economics, needs of consumers, and existing state law.

- Willowbank, Wano, Russell, Corwin, and Homer Townships' land use and zoning regulations and requirements are unreasonably restrictive because they effectively preclude high voltage transmission line development within the Townships' boundaries. There is no reasonable route the Project could take through these townships.

- Moratoriums that categorically prohibit the development of electric transmission facilities are unreasonably restrictive. Transmission lines are not a new technology that warrants a moratorium. There are no unique circumstances that justify the enacted moratoriums and the reasons stated for the moratoriums are insufficient. These moratoriums impose a blanket prohibition on transmission line development within the boundaries of the political subdivisions, which frustrates any electric transmission routing, including the JETx Project.

- To reroute around Willowbank, Wano, Russell, Corwin, and Homer Townships and into adjacent townships would add approximately 12 additional miles to the Project's Route, and result in an incremental cost of approximately $24 million more than the cost of the proposed Route making it unreasonably restrictive on the basis of economics and greater impacts associated with a longer route.

- The 2,640 ft Setback applied by Corwin and Homer Townships is arbitrary and unreasonably restrictive on its face because it is more than five times greater than the statutory 500-foot minimum setback from occupied residences under NDCC 49-22-05.1(3).

- The 2,640 ft Setback unreasonably restricts the area available for transmission line development, especially when considered with the PSC's existing exclusion and avoidance area criteria. For example, in Homer Township, the 2,640 ft Setback effectively prohibits a transmission line from crossing the township from east to west and north to south. In addition, the 2,640 ft Setback shifts impacts to other landowners and affects existing voluntary agreements. Furthermore, the 2,640 ft Setback conflicts with other siting goals and criteria at the state and local levels because it pushes infrastructure into fields and pastures and prevents the Project from minimizing impacts to landowners by routing along existing roads, section/quarter lines, or other utility rights of way.

- Among several other potential challenges and limitations as identified in Section 2.3.1, installing an underground HVTL to avoid the 2,640 ft Setback is unreasonably restrictive in view of existing technology. The Applicants would need to perform extensive studies to determine if the different characteristics of an underground configuration could be reliably integrated into a transmission system composed primarily of overhead transmission lines. The Applicants are not aware

regulations or requirements are unreasonably restrictive. Approval of this Application based on automatic preemption alone could likely subject the parties to further litigation.

of other underground 345-kV installations that exist in this region of the scope and size that would be required to traverse two townships.

- The PSC has already determined the need for the Project and its benefits to consumers through the CPCN proceeding in Case No. PU-24-091. Actions of political subdivisions belatedly questioning need in order to restrict development conflict with the findings in that proceeding, and the needs of consumers regardless of location. Allowing political subdivisions to deny permits based on questions of public need will undermine state law and the PSC's jurisdiction to grant or deny certificates of public convenience and necessity.

For these reasons, the Applicants respectfully request the PSC find local land use and zoning regulations and requirements summarized in this Section 7.5, as applied to the Project Route, are unreasonably restrictive in view of existing technology, factors of cost or economics, needs of consumers regardless of location, and/or under state law. Applicants reserve the right to request preemption of any additional local land use and zoning regulations and requirements of the political subdivisions.

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8.0 Identification of potential permits and approvals

Table 8.0-1 identifies permits, approvals, and other Project coordination that may be needed with federal, state, and local agencies, and tribal governments. Permits dependent on the final Project Route will be applied for after receiving Commission approval, but prior to construction. This listing of regulatory requirements is subject to change as development of the Project continues.

Copies of federal and state agency correspondence are included in Appendix E. Copies of local agency correspondence along with approved permits and denied permits are included in Appendix M.

Table 8.0-1. Potential permits and approvals

Agency	Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
Federal			
FAA	Form 7460-1, Notice of Proposed Construction	Will be filed at least 45 days prior to construction.	Determination that construction does not pose a hazard to air navigation.
	Form 7460-2, Notice of Actual Construction or Alteration	Will be filed following construction.	Notification to the FAA of construction or alteration of actual structures.
USACE	Section 10 Permit for the James River crossing	Applicants are in consultation with USACE.	Required for the construction of any structure in or over any navigable Waters of the United States (WOTUS).
	Section 404 Nationwide Permit (NWP) 57	Surveys are completed and Applicants are in consultation with USACE.	Required for the discharge of dredged or fill material into all WOTUS, including jurisdictional wetlands.
USEPA	SPCC Plan	Existing SPCC Plans for the Jamestown Substation and the Ellendale 345kV Trans Substation will be updated to reflected modifications.	Required if more than 1,320 gallons of oil are stored on site.
USFWS	Endangered Species Act compliance	Applicants have consulted with USACE; a review will be completed once a	Formal Section 7 consultation occurs if there is a federal nexus, including a Section 10 permit.

Agency	Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
		Section 10 permit is submitted. Applicants have been in coordination with USFWS on threatened and endangered species habitat.	
State			
PSC	Certificate of Corridor Compatibility and Transmission Facility Route Permit	Being applied for with the filing of this Application.	Required for development of transmission facilities over 115-kV.
	Certificate of Public Convenience and Necessity	Approved on November 20, 2024.	Required for construction, ownership and operation of the Project.
NDGFD	Coordination with NDGFD regarding potential impacts on wildlife	In progress.	Required consultation during siting process.
	Coordination with NDGFD regarding the Corridor crossing two Save Our Lakes Easements	In progress; preliminary approval pending final design and as-builts.	Required for crossing two Save Our Lakes easements. Coordination is included in Appendix E.
NDSHPO	Compliance with the National Historic Preservation Act	In progress.	Required to be in compliance with NDCC and Federal Section 106 requirements for consultation for cultural resources. Class III cultural Resources Inventory has been submitted for review of effect determinations.
NDDEQ	NPDES Permit: General Construction	Will be acquired prior to construction.	Required for disturbance of over one acre of land and a SWPPP must be prepared.

Agency		Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
		Storm Water NDR10-0000		
		401 Water Quality Certification	Approval is included with a 404 NWP 57.	NDDEQ has certified all activities for NWP 57.
NDDWR		Sovereign Lands Permit	Will be acquired prior to construction.	Required for crossing of the James River, a state navigable river.
		Conditional or Temporary Permit for water appropriation	Will be acquired prior to construction.	Required for water appropriation.
NDDOT		Road Approach/ Access Permit	Will be acquired prior to construction as applicable.	Required for the construction of access roads connecting with state highways.
		Utility Crossing Permit	Will be acquired prior to construction.	Required for utility crossings on state highway ROWs.
NDDTL		ROW Easement	Not required.	Required for surface trust lands, none are located within the Corridor.
NDPRD		Coordination regarding Section 6(f) Land and Water Conservation Fund (LWCF) properties which have use restrictions	Not required.	Required for any impacts to LWCF properties.
		North Dakota Natural Heritage Inventory	Review completed.	Required to protect threatened and endangered species in North Dakota.
Local[1, 2, 3]				
Stutsman County	Stutsman County	Conditional Use Permit	Not applicable.	Not applicable.
	Bloom Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 12/3/2024.
	Corwin Township	Conditional Use Permit	Denied.	Applies to electric transmission lines within the Township.

Agency		Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
				A CUP application was submitted on 4/29/2025. The Board of Supervisors denied the CUP application on 6/10/2025.
		Setback requirement of transmission line from occupied rural residences	Variance request denied.	Applies to transmission line within 2,640 feet of an inhabited rural residence within the Township. A variance request was submitted on 4/29/2025. The Board of Supervisors denied the variance request on 6/10/2025. Waivers can be obtained from landowners if a transmission line is within 2,640 feet from inhabited rural residences. Waiver attempts have been unsuccessful.
	Fried Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 11/19/2024.
	Homer Township	Conditional Use Permit	Denied.	Applies to electric transmission lines within the Township. CUP application was submitted on 5/2/2025. The Board of Supervisors denied the CUP application on 6/17/2025.
		Setback requirement of transmission line from occupied rural residences	Variance request denied.	Required for a transmission line within 2,640 feet of an inhabited rural residence. A variance request was submitted on 5/2/2025. The Board of Supervisors denied the variance request on 6/17/2025. Waivers can be obtained from landowners if a transmission

Agency		Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
				line is within 2,640 feet from inhabited rural residences. Waiver attempts have been unsuccessful.
	Montpelier Township	Conditional Use Permit	Not applicable.	Township defers zoning to Stutsman County.
	Rose Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 11/7/2024.
	Spiritwood Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 10/14/2024.
	Winfield Township	Conditional Use Permit	Not applicable.	Not applicable.
LaMoure County	LaMoure County	Conditional Use Permit	Not applicable.	LaMoure County does not currently have a zoning ordinance.
	Adrian Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 11/12/2024.
	Russell Township	Conditional Use Permit	Approved then Revoked; Moratorium in place.	Applies to electric transmission lines within the Township. CUP was approved 10/24/2024 then subsequently was revoked on 6/17/2025. The Township Board of Supervisors approved a 2-year moratorium on HVTLs and numerous other types of development projects on 6/17/2025.
	Wano Township	Conditional Use Permit	Denied.	Applies to electric transmission lines within the Township.

Agency		Type of Permit, Regulatory Compliance, or Coordination	Status	Need and Status Notes
				CUP was denied on 4/2/2025.
	Willowbank Township	Conditional Use Permit	Denied; Moratorium in place.	Applies to electric transmission lines within the Township. CUP was denied on 4/9/2025. The Township Board of Supervisors approved a 2-year moratorium specific to the JETx Project on 6/11/2025.
Dickey County	Dickey County	Conditional Use Permit	Not applicable.	Dickey County does not currently have zoning ordinances.
	Elden Township	Conditional Use Permit	Approved.	Applies to electric transmission lines within the Township. CUP was approved 12/9/2024.
	Ellendale Township	Conditional Use Permit	Not applicable.	Not applicable.
	Keystone Township	Conditional Use Permit	Not applicable.	Not applicable.
	Valley Township	Conditional Use Permit	Not applicable.	Not applicable.
Various – County and Township		Road Approach, Crossing Agreements, Road Utility Permits, and Road Use Agreements	Applicants will work with local officials in an attempt to obtain agreements and permits prior to construction, as applicable.	Applies to construction of a road approach or to add to an existing approach on County and Township road ROWs, crossing, and use of road ROWs, as applicable.

1. As described in Section 7.5 of this Application, all local land use and zoning regulations, restrictions, and corresponding permitting requirements of political subdivisions are automatically superseded and preempted by the PSC under NDCC 49-22-16(2)(b), as amended by House Bill 1258 (2025) (HB 1258) if the Applicants receive PSC route approval.
2. Table 8.0-1 still includes zoning permits within the local political subdivisions because the Applicants initiated their local outreach efforts prior to the effective date of NDCC 49-22-16(2)(b) and continued their local outreach efforts after the passage of HB 1258 in an attempt to coordinate and obtain approval from local political subdivisions.
3. Information contained within Table 8.0-1 represents the Applicants' understanding of zoning permits regulations within each of the local political subdivisions as of July 18, 2025.

9.0 Factors considered

The Siting Act (see NDCC 49-22-09) lists the factors in the following subsections as those that guide the Commission in evaluating applications and designations of corridors and routes.

9.1 Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment

Planning for the Project has taken many considerations related to public health and welfare, the environment, and natural resource considerations into account to designate a Corridor and Route that minimizes potential effects on human and natural environments. The Applicants took into consideration public, landowner, stakeholder, and agency input and concerns when selecting the Route for the Project. The Applicants have identified necessary mitigation strategies and construction BMPs that will be used during engineering, construction, and reclamation to minimize impacts.

The preceding Sections 6.1 through Section 6.15 discuss the research and investigations relevant to the potential effects of the construction and operation of the Project on public health and welfare, natural resources, and the environment. The effects and mitigation in relation to the Corridor and Route of the Project are discussed under the impact and mitigation subheadings within Sections 6.1 through Section 6.15.

9.2 Effects of new electric energy conversion and electric transmission technologies and systems designed to minimize adverse environmental effects

The Applicants will utilize the most recent energy conversion and electric transmission technologies and systems available to minimize potential impacts on the environment, as discussed in Section 3.0. The Project will make use of the most appropriate technologies, construction, and stormwater BMPs, and construction materials to minimize adverse environmental effects during construction and reclamation.

9.3 Potential for beneficial uses of waste energy from a proposed electric energy conversion facility

Since a HVTL does not produce waste energy, the potential for beneficial uses of waste energy is not applicable to the Project.

9.4 Adverse direct and indirect environmental effects that cannot be avoided should the proposed site or route be designated

Unavoidable adverse effects to the environment primarily include the physical impacts on the land (primarily agricultural) associated with the HVTL transmission structures and associated Jamestown substation expansion. The Applicants will implement mitigation measures as described in Section 6.0 and summarized in Section 6.16, and as identified by regulatory agencies to minimize these unavoidable adverse environmental effects.

9.5 Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects

The Applicants considered several alternative corridors and routes during the routing and siting process that best satisfied the requirements prescribed by the PSC, met the purpose and need of the Project, and accommodated agency, stakeholder, and landowner input. Following a rigorous review of alternative corridors and routes, along with the engagement of the public and agencies as described in more detail in Section 3.0, the Corridor and Route included in this Application minimizes and avoids impacts to the exclusion and avoidance areas and utilizes selection criteria as defined by the Commission while minimizing conflicts with landowner requests.

9.6 Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated

There are few commitments of resources associated with the Corridor and Route that are irreversible and irretrievable, but include those resources primarily related to temporary impacts from construction activities and the permanent impacts from transmission structures that are placed in unbroken grasslands which are minimal. Those impacts and mitigations are described in Section 6.0 and summarized in Section 6.16.

9.7 Direct and indirect economic impacts of the proposed facility

The Applicants undertook a study with NDSU to quantify the direct and indirect economic impacts from the Project. This summary is provided in Appendix G.

9.8 Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route

No conflicts are anticipated with existing state and local government and private entities' development plans. The Applicants are aware of proposed energy development projects in the vicinity of the Corridor and Route and are working with the respective private developers to avoid conflicts; no impacts to existing or planned development are anticipated.

9.9 Effect of the proposed site or Route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites

Project infrastructure has been sited to avoid direct impacts to known NRHP-eligible or unevaluated eligible historic properties and cultural resources. The Project plans to avoid direct impacts to NRHP-eligible or unevaluated eligible historic properties and cultural resources identified during the Class III: Intensive Cultural Resources Inventory. However, if avoidance is not possible, the Applicants will consult with the participating Tribes, federal agencies and NDSHPO to mitigate impacts.

The Project plans to avoid Tribal and Cultural Heritage resources identified during the Tribal cultural resource survey and the Class III: Intensive Cultural Resources Inventory. However, if avoidance is not possible, the Applicants will consult with the participating Tribes, federal agencies and NDSHPO to mitigate impacts.

9.10 Effect of the proposed site or route on areas unique because of biological wealth or because the areas are habitats for rare and endangered species

The Applicants have identified and will implement measures to avoid and minimize effects on biological resources throughout construction, operation, and maintenance of the Project. Detailed discussion of biological resources, potential impacts, and proposed mitigation measures is provided in Section 6.12 (Wetlands), Section 6.13 (Vegetation), Section 6.14 (Wildlife), and Section 6.15 (Rare and Unique Natural Resources).

9.11 Problems raised by federal agencies, other state agencies, and local entities

Applicable federal, state, and local agencies were contacted to receive their comments on the -Project in an initial request for information letter sent to each agency and 15 tribes in March 2023. Another request for input letter was sent out to the 15 tribes in September 2023. A summary of the March and September 2023 agency outreach efforts and a copy

of each of the notification letters and responses, if any, is included in Appendix E. Sections 7.3 and 7.4 provide a summary of communications with agencies with vested interest in the Project who engaged the Applicants and their Consultants in consultation. Where applicable, letters, meeting notes, and other correspondence received from federal and state agencies are provided in Appendix E and local entities are provided in Appendix M.

9.12 Generator interconnection agreement

Because the Applicants own the Jamestown Substation and the Ellendale 345-kV Trans Substation, no generator interconnection agreements are needed for the Applicants to construct, operate, and maintain the Project.

10.0 Qualifications of contributors

The qualifications of the significant contributors of this Consolidated Corridor and Route Permit Application are in Table 10.0-1 below.

Table 10.0-1. Qualifications of contributors

Name Project Role Company	Education and Professional Experience
Jason Weiers Project Development Otter Tail Power	Mr. Weiers has over 25 years of experience in the electric utility industry. He has spent approximately 22 years in transmission planning performing a variety of different system studies, writing reports, and supporting regulatory matters as an expert witness both at the state and federal levels. For the past 2 years, Mr. Weiers has been developing large transmission projects through drafting and filing federal, state and local permits, as well as negotiating business arrangements with neighboring utilities for co-owned transmission projects. He has earned a Bachelor of Science degree in Electrical Engineering from North Dakota State University and is a licensed Professional Engineer in the State of Minnesota. He is also a member of the Red River Valley chapter of the Institute of Electronics and Electrical Engineers (IEEE).
Kevin Scheidecker Principal, Environmental Services Otter Tail Power	Mr. Scheidecker has 3 years of experience in environmental permitting and coordination as a senior environmental specialist with Otter Tail Power. His areas of focus are on environmental surveys; agency, LGU and stakeholder outreach; and environmental permitting and compliance. He has other career experience in wildlife management and natural resource management. He earned his Bachelor of Science in Biology from North Dakota State University.
Todd Langston Manager, Transmission Projects Otter Tail Power	Mr. Langston has over 38 years in the utility industry of which 34 have been with Ottertail Power. Over those years he has participated in and overseen the permitting, engineering, and the construction over transmission substation and lines in the states that Ottertail Power serves. He attended the North Dakota State School and Science and then University Texas at Alington studying Civil Engineering.
Robert Frank Director of Electric Transmission Engineering Montana-Dakota Utilities	Mr. Frank has 21 years of experience in the electric utility industry. The past 11 years have been spent in his current position, having leadership responsibility for the project management, engineering, design, construction, and maintenance of Montana-Dakota's electric transmission and substation facilities, including property and right-of-way acquisitions. Mr. Frank has earned a Bachelor of Science degree from North Dakota State University and a Master of Business Administration degree from the University of Mary. He is a licensed Professional Engineer in the state of North Dakota.
Jaden Voth Environmental Specialist Montana-Dakota Utilities Co.	Mr. Voth has 8 years of experience in environmental permitting and compliance as an Environmental Specialist. His areas of focus are air and water quality permitting and compliance, natural and cultural resource permitting and siting for transmission projects, CERCLA and EPCRA reporting, and risk management plan compliance. He earned his Bachelor of Science in Biology from the University of Mary in Bismarck, North Dakota.

Name Project Role Company	Education and Professional Experience
Jennifer Hanley Environmental Project Manager HDR Engineering	Ms. Hanley has 26 years of experience in engineering and environmental consulting with experience progressing from environmental field studies to management of large infrastructure projects. She has spent the past 3 years managing different aspects of high-voltage transmission line projects including routing and siting, permitting, and variance request management for construction. Ms. Hanley earned a Bachelor of Science in Civil Engineering from North Dakota State University as well as a Master of Business Administration from the University of Phoenix. Ms. Hanley is a licensed Professional Engineer in North Dakota, South Dakota, Montana, Minnesota, and Texas.
Monica Peterson Permit Application and Routing Lead HDR Engineering	Ms. Peterson has 13 years of experience in environmental consulting as an Environmental Scientist and Environmental Project Manager. She has spent most of her career in high-voltage transmission line routing and siting, permitting, construction compliance, and construction field management, including experience in North Dakota. She earned a Bachelor of Arts in Political Science and Environmental Studies from Iowa State University.
Kelly MacVane Permit Application Support HDR Engineering	Ms. MacVane has 17 years of experience in environmental consulting as an environmental scientist, regulatory specialist, and project manager. Ms. MacVane has spent the majority of her professional career preparing National Environmental Policy Act (NEPA) documents, permitting, and managing various energy projects. She earned a Bachelor of Arts in Political Science and Environmental Studies from Denison University.
Megan Mueller Cultural Resource Specialist HDR Engineering	Ms. Mueller is a cultural resource specialist with 15 years of professional experience in environmental consulting. She has spent most of her professional career preparing documents for projects that require review under Section 106 of the NHPA, and has worked on NEPA documents, permitting and construction compliance. She earned a Bachelor of Science in Anthropology from the University of Wisconsin-Oshkosh.
Josh Hellman GIS Analyst HDR Engineering	Mr. Hellman is a GIS analyst with 17 years of professional experience. He is proficient in performing data processing and modeling, analyzing data, and creating GIS data solutions. His technical skillset includes configuring ArcGIS Online maps and data. Mr. Hellman has a Bachelor of Science in GIS and a Bachelor of Science in Geography from South Dakota State University.
Jordan Britz Transmission Line Lead Engineer POWER Engineers	Mr. Britz is a Transmission Line Engineer with 10 years of experience and is a registered professional engineer (P.E.) in the state of North Dakota. He has led projects of normal and extra high voltage (EHV) across the Midwest from the design phase through construction. Mr. Britz has a Bachelor of Science in Civil Engineering from Lawrence Technological University and is currently working on his Master of Science in Geotechnical Engineering.

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Audubon Society Areas - Source: National Audubon Society - Download Date: 4/3/2023 - Source URL: https://library-audubon.hub.arcgis.com/datasets/audubon::important-bird-areas-polygon-public-view/explore?location=37.353507%2C65.812499%2C3.81

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Historic Buildings - Source: NPS - Download Date: 1/8/25 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

Historic Districts - Source: NPS - Download Date: 7/15/2025 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

Historic Objects - Source: NPS - Download Date: 7/15/2025 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

Historic Sites - Source: NPS - Download Date: 7/15/2025 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

Historic Structures - Source: NPS - Download Date: 1/8/25 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

IPAC Species Range Data - Source: USFWS - Download Date: 6/26/2023 - Source URL: IPaC: Explore Location resources (fws.gov)

Lakes and Ponds 100k - Source: NDGIS - Download Date: 4/20/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-lakes-and-ponds-100k/explore

Mineral Trust Lands - Source: NDGIS - Download Date: 1/3/25 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-mineral-trust-lands/explore?location=47.439082%2C-100.350346%2C7.90

Monarch Butterfly - Source: USFWS - Download Date: 1/3/25 - Source URL: Species Profile for Monarch butterfly (Danaus plexippus) (fws.gov)

Monuments - Source: US Forest Service - Download Date: 2/6/2023 - Source URL: https://data-usfs.hub.arcgis.com/datasets/usfs::public-land-survey-monument-feature-layer/explore?location=36.414501%2C-98.390000%2C4.99

National Parks - Source: NPS - Download Date: 2/6/2023 - Source URL: https://irma.nps.gov/DataStore/Reference/Profile/2210280

Native Woodlands - Source: NDGIS - Download Date: 7/16/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/NDGOV::ndgishub-native-woodland-micro-range-1/about

Natural Gas Pipelines - Source: HIFLD - Download Date: 7/16/2025 - Source URL: https://hifld-geoplatform.opendata.arcgis.com/datasets/natural-gas-pipelines/explore?location=33.704981%2C-109.077389%2C3.91

ND Landslides - Source: NDGIS - Download Date: 11/21/2024 - Source URL: NDGISHUB Landslides | North Dakota GIS Hub Data Portal

ND PLOT Land - Source: NDGIS - Download Date: 1/3/25 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-plots-lands/explore?location=47.441310%2C-100.427597%2C7.96

ND Save Our Lakes and Other Easements - Source: NDGFD - Download Date: 8/16/2024 - Source URL: Provided by NDGFD via email

ND Scenic Byways - Source: NDGIS Hub - Download Date: 6/26/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-scenic-byway-roads/explore

NDGF Unbroken Grasslands - Source: NDGFD - Download Date: 3/21/2024 - Source URL: Emailed

NHD Flowline - Source: USGS - Download Date: 2/20/2023 - Source URL: https://apps.nationalmap.gov/downloader/

NHD Waterbody - Source: USGS - Download Date: 2/20/2023 - Source URL: https://apps.nationalmap.gov/downloader/

NLCD - Source: USGS - Download Date: 9/28/2023 - Source URL: https://www.mrlc.gov/viewer/

Northern Long Eared Bat - Source: USFWS - Download Date: 1/3/25 - Source URL: Species Profile for Northern Long-Eared Bat (Myotis septentrionalis) (fws.gov)

Piping Plover - Source: USFWS - Download Date: 1/3/25 - Source URL: Species Profile for Piping Plover (Charadrius melodus) (fws.gov)

PLSS Sections - Source: NDGIS - Download Date: 4/20/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/NDGOV::ndgishub-plss-sections/explore

PLSS Townships - Source: NDGIS - Download Date: 4/20/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/NDGOV::ndgishub-plss-townships/explore?location=47.440521%2C-100.301699%2C7.95

Potentially Undisturbed Grassland - Source: USFWS - Download Date: 6/26/2023 - Source URL: ServCat - Raster Dataset - (Code: 148897) (fws.gov)

Railroad - Source: NDGIS Hub - Download Date: 2/10/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ad438e42bf1b4ea5b0488c6fd62d527f_0/explore

Reclamation Lands - Source: NDGIS - Download Date: 4/14/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-reclamation-lands/explore?location=47.412113%2C-100.648746%2C8.06

Red Knot - Source: USFWS - Download Date: 1/3/25 - Source URL: Species Profile for Red knot (Calidris canutus rufa) (fws.gov)

Rivers Streams - Source: NDGIS - Download Date: 2/10/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-streams-and-rivers-100k/explore

Schools - Source: NDGIS - Download Date: 1/8/25 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-k-12-schools/explore?location=47.440317%2C-100.319081%2C7.94

Sensitive Groundwater Areas - Source: NDGIS - Download Date: 7/16/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-sensitive-groundwater-areas/explore?location=47.388420%2C-100.390012%2C7.98

Solid Waste Landfill Facilities - Source: NDGIS - Download Date: 1/8/25 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-landfills/explore?location=47.464335%2C-100.449265%2C7.97

State Forests - Source: NDGIS - Download Date: 2/6/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-state-forest/explore?location=47.742349%2C-98.899208%2C8.95

State Game Management Areas - Source: NDGIS - Download Date: 7/16/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-wildlife-management-areas/explore?location=47.443634%2C-100.471124%2C8.01

State Historical Markers - Source: Historical Marker DB - Download Date: 1/8/25 - Source URL: https://www.hmdb.org/results.asp?Search=State&State=North%20Dakota

State Parks - Source: NDGIS - Download Date: 7/15/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-state-parks/explore?location=47.462531%2C-100.531407%2C8.22

State Wildlife Native Habitat Area - Source: NDGIS - Download Date: 7/16/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-key-native-wildlife-habitat-areas/explore?location=47.432346%2C-100.292200%2C7.88

Surface Trust Lands - Source: NDGIS - Download Date: 1/3/25 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-surface-trust-lands/explore?location=47.440974%2C-100.451486%2C7.97

USFWS Interest Tracts - Source: FWS - Download Date: 2/13/2023 - Source URL: Provided by USFWS via email

WAPA - Source: - Download Date: 2/21/2023 - Source URL:

Western Prairie Fringed Orchid - Source: USFWS - Download Date: 1/8/25 - Source URL: Species Profile for Western prairie fringed Orchid (Platanthera praeclara) (fws.gov)

Wetlands - Source: NDGIS - Download Date: 2/10/2023 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-wetlands/explore?location=47.395782%2C-100.301899%2C7.83

Whooping Crane - Source: USFWS - Download Date: 1/8/25 - Source URL: Species Profile for Whooping crane (Grus americana) (fws.gov)

Wild, Scenic, Recreational Rivers - Source: NPS - Download Date: 7/16/2025 - Source URL: https://data-usfs.hub.arcgis.com/datasets/national-wild-and-scenic-rivers-feature-layer/explore?location=33.001383%2C-95.075050%2C5.00

Wilderness Areas - Source: US Forest Service - Download Date: 2/6/2023 - Source URL: https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=wilderness

Wildlife Areas - Source: NDGIS - Download Date: 7/16/2025 - Source URL: https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-wildlife-management-areas/explore?location=47.443634%2C-100.471124%2C8.01

Wildlife Refuges - Source: USFWS - Download Date: 7/16/2025 - Source URL: https://gis-fws.opendata.arcgis.com/datasets/fws::fws-national-realty-tracts/explore?location=7.037740%2C0.000000%2C2.40

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