NORTH PLAINS CONNECTOR

A Grid United Project

Consolidated Application for a Certificate of Corridor Compatibility and Transmission Facility Route Permit

North Plains Connector Project

Submitted to:

North Dakota Public Service Commission

Submitted by:

North Plains Connector LLC

GRID UNITED

February 2026

[THIS PAGE IS INTENTIONALLY LEFT BLANK.]

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
AC	alternating current
ACSR	aluminum conductor steel reinforced
AJD	Approved Jurisdictional Determination
ALLETE	ALLETE Inc.
AML	Abandoned Mine Lands
ANSI	American National Standards Institute
APLIC	Avian Powerline Interaction Committee
Application	consolidated application for a Certificate of Corridor Compatibility and Transmission Facility Route Permit
BGEPA	Bald and Golden Eagles Protection Act
BLM	U.S. Bureau of Land Management
BMPs	best management practices
Byway Committee	Old Red Old Ten Scenic Byway Committee
C&P	control and protection
Certificate	Certificate of Corridor Compatibility
CFR	Code of Federal Regulations
CMRP	Construction, Mitigation, and Reclamation Plan
Commission	North Dakota Public Service Commission
CUP	Conditional Use Permit
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DC	direct current
DMR	dedicated metallic return
DOE	U.S. Department of Energy
DOW	U.S. Department of War (also known as U.S. Department of Defense)
ECI	Environmental Consultants, Inc
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EMF	electric and magnetic fields
EPA	U.S. Environmental Protection Agency
EPC	engineering, procurement, and construction
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FOA	Funding Opportunity Announcement

FR	Federal Register
GDO	Grid Deployment Office
GIS	geographic information systems
Grid United	Grid United LLC
GRIP	Grid Resilience and Innovation Partnerships
HVDC	high-voltage direct current
HVDC Transmission Line	new 525-kilovolt high-voltage direct current transmission line in Golden Valley, Slope, Hettinger, Grant, and Morton counties, North Dakota
Hz	hertz
IARC	International Agency for Research on Cancer
ICBM	Intercontinental Ballistic Missile
ICES	International Committee on Electromagnetic Safety
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
kcmil	thousand circular mils
KRIV	Knife River Indian Villages
kV	kilovolt
L_{eq}	continuous sound level
LMNG	Little Missouri National Grassland
LMSRC	Little Missouri Scenic River Commission
LRMP	Land and Resource Management Plan for the Dakota Prairie Grasslands
MBTA	Migratory Bird Treaty Act
MDU	Montana-Dakota Utilities Company
Merjent	Merjent, Inc.
MLRA	Major Land Resource Areas
MISO	Midcontinent Independent System Operator
Morton County Converter Station	New AC/DC converter station in Morton County, North Dakota
Morton Transmission Line	New 345-kilovolt alternating current transmission line in Morton County, North Dakota
MOU	memorandum of understanding
MTFO	Montana Field Office
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDEQ	North Dakota Department of Environmental Quality
NDDOT	North Dakota Department of Transportation
NDDTL	North Dakota Department of Trust Lands
NDDMR	North Dakota Department of Mineral Resources
NDDWR	North Dakota Department of Water Resources
NDFO	North Dakota Field Office

NDGFD	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey
NDPR	North Dakota Parks and Recreation Department
NDTA	North Dakota Transmission Authority
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NFS	National Forest System
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NOAA	National Oceanic and Atmosphere Administration
NOI	Notice of Intent
North Plains	North Plains Connector LLC
North Plains Connector	the entire North Plains Connector Project development, including proposed transmission lines and facilities in Montana and North Dakota
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O&M	operations and maintenance
OHWM	ordinary high-water mark
Oliver Transmission Line	New 345-kilovolt alternating current transmission line in Oliver and Morton counties, North Dakota
OPGW	optical ground wire
Pattern	Pattern NPC Transmission LLC
PCA	priority conservation areas
PCN	Pre-Construction Notification
PJD	Preliminary Jurisdictional Determination
PLOTS	Private Land Open to Sportsmen
PLS-CADD	Power Line Systems – Computer Aided Design and Drafting
POD	Plan of Development
PPJV	Prairie Pothole Joint Venture
Project	North Dakota portion of the North Plains Connector Project
Project Route	the centerlines of the new permanent electric transmission line segments
RCRA	Resource Conservation and Recovery Act
RFSS	Regional Forester's Sensitive Species
RNA	Research Natural Area
Route Permit	Transmission Facility Route Permit
SCADA	Supervisory Control and Data Acquisition
SCENIHR	Scientific Committee on Emerging and Newly Identified Health Risk

SCHEER	Scientific Committee on Health, Environmental and Emerging Risks
SDWA	Safe Drinking Water Act
SHPO	North Dakota State Historic Preservation Office
SHSND	State Historical Society of North Dakota
SIA	Special Interest Areas
Siting Act	North Dakota Energy Conversion and Transmission Facility Siting Act
Siting Rules	NDAC Article 69-06
SPP	Southwest Power Pool
SUP	Special Use Permit
SWPPP	Stormwater Pollution Prevention Plan
TCS	Tribal/Traditional Cultural Specialists
THPO	Tribal Historic Preservation Officers
TRC	TRC Companies, Inc.
TWG	Transmission Working Group
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USDA ARS	U.S. Department of Agriculture – Agricultural Research Station
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
WECC	Western Electricity Coordinating Council
WEST	Western EcoSystems Technology, Inc.
WHO	World Health Organization
WMA	Wildlife Management Area

APPLICATION CHECKLIST

State Authority and Description	Section Addressed
North Dakota Century Code 49-22-08. Application for a certificate - Notice of filing - Amendment - Designation of a site or corridor.	
1. An application for a certificate shall be in such form as the commission may prescribe, containing the following information:	
a. A description of the size and type of facility.	1.1, 4.0, 5.0
b. A summary of any studies which have been made of the environmental impact of the facility.	6.0, Appendix I
c. A statement explaining the need for the facility.	1.1, 1.3
d. An identification of the location of the preferred site for any electric conversion facility.	Not applicable
e. An identification of the location of the preferred corridor for any electric transmission facility.	1.2, 1.3, 1.7, 1.8, 3.0, Appendix A
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.	1.5, 1.7, 3.0, 6.0, 7.0
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, Appendix G
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.	3.1, 3.2, 4.6, 8.0
i. Such other information as the applicant may consider relevant or the commission may require.	Throughout the application
North Dakota Century Code 49-22-08.1 - Application for a permit - Notice of filing - Amendment - Designation of a route.	
1. An application for a route permit for an electric transmission facility within a designated corridor must be filed no later than two years after the issuance of the certificate and must be in such form as the commission may prescribe, containing the following information:	
a. A description of the type, size, and design of the proposed facility.	1.0, 1.1, 4.0
b. A description of the location of the proposed facility.	1.0, 1.1, 1.6, 1.7, Appendix A
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.	3.1, 3.2, 4.6, 8.0
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	5.0, 6.0
e. A description of the right-of-way preparation and construction and reclamation procedures.	5.1
f. A statement setting forth the manner in which:	
(1) The utility will inform affected landowners of easement acquisition, and necessary easement conditions and restrictions.	1.2.3, 1.8
(2) The utility will compensate landowners for easements, without reference to the actual consideration to be paid.	1.2.3, 1.8
g. Such other information as the utility may consider relevant or the commission may require.	Throughout the Application
North Dakota Century Code 49-22-09. Factors to be considered in evaluating applications and designation of sites, corridors, and routes.	
1. The commission shall be guided by, but is not limited to, the following considerations, where applicable, to aid the evaluation 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.	6.0, 8.1, Appendix I
b. The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.	6.0, 8.2
c. The potential for beneficial uses of waste energy from a proposed energy conversion facility.	8.3
d. Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.	6.0, 8.4
e. Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.	1.5, 8.5

State Authority and Description	Section Addressed
f. Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	8.6
g. The direct and indirect economic impacts of the proposed facility.	8.7
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.	8.8
i. The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	6.4, 8.9
j. The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species.	6.11, 8.10
k. Problems raised by federal agencies, other state agencies, and local entities.	7.2, 8.11, Appendix J
North Dakota Administrative Code 69-06-05-01. Application	
2. The application must contain:	
a. A description of:	
(1) The type of facility proposed	1.0, 1.1, 4.0
(2) The purpose of the facility	1.0, 1.3
(3) The technology to be used	1.0, 1.1, 4.0
(4) The type of product to be transmitted	1.0, 1.1, 4.1.1
(5) The source of the product to be transmitted	1.0, 1.1, 1.3
(6) The final destination of the transmission line	1.0, 1.1, 1.6, Appendix A
(7) The proposed size and design and any alternate size or design that was considered, including:	
(a) The width of right of way;	1.6, 1.7.3, Appendix A
(b) The approximate length of the facility;	1.0, 1.1, 4.1.2
(c) The estimated span length for electric facilities;	4.1.2
(d) The anticipated type of structure for electric facilities;	4.1
(e) The voltage for electric facilities;	1.1, 4.1.1
(f) The requirement for and location of any new associated facilities	1.0. 1.1, 1.3, 1.6, 1.7, 1.10
(g) The estimated distance between surface structures for pipeline facilities;	Not applicable
(h) The pipe size for pipeline facilities;	Not applicable
(i) The maximum design operating pressure and temperature for pipeline facilities;	Not applicable
(j) The maximum design flow rate for pipeline facilities; and	Not applicable
(k) The number and general location of compressor or pumping stations.	Not applicable
b. The anticipated time schedule for accomplishing major events, including:	
(1) Obtaining the certification of corridor compatibility;	1.9
(2) Obtaining the route permit;	1.9
(3) Completing right-of-way acquisition;	1.9
(4) Starting construction;	1.9
(5) Completing construction;	1.9
(6) Testing operations; and	1.9
(7) Commencing operations.	1.9
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.	Appendix I, Appendix J
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.	1.3
e. A description of any feasible alternative methods for serving the need.	1.5
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.	1.6, 1.7.2, Appendix A

State Authority and Description		Section Addressed
g.	A study area that includes a proposed corridor of sufficient width to enable the commission to evaluate the factors addressed in North Dakota Century Code section 49-22-09.	1.6, 1.7.4, Appendix A
h.	A discussion of the factors in North Dakota Century Code section 49-22-09 to aid the commission's evaluation of the proposed route.	8.0
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.	Appendix B
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, Appendix A
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.	1.2, 3.0, 6.0, Appendix A
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, Appendix G
m.	The qualifications of each person involved in the corridor location study.	9.0
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
o.	An eight and one-half-inch by eleven-inch black and white map suitable for newspaper publication depicting the site area.	Electronically provided
p.	A discussion of present and future natural resource development in the area.	6.7, 6.8
q.	Map and GIS requirements. The applicant shall provide information that is complete, current, presented clearly and concisely, and supported by appropriate references to technical and other written material available to the commission.	Appendix A, electronically provided
North Dakota Administrative Code 69-06-08-02. Transmission facility corridor and route criteria.		
1.	Exclusion areas.	3.1
2.	Avoidance areas.	3.2
3.	Selection criteria.	3.3
4.	Policy criteria.	3.4

1.0 INTRODUCTION

North Plains Connector LLC (North Plains), a Delaware limited liability company authorized to do business in the State of North Dakota, submits this consolidated application for a Certificate of Corridor Compatibility (Certificate) and Transmission Facility Route Permit (Route Permit) (Application) to the North Dakota Public Service Commission (Commission) for the North Dakota portion of the North Plains Connector Project, a proposed interregional high voltage electric transmission line system and associated facilities. For the purposes of this Application, "Project" refers solely to the portion located in North Dakota, while references to "North Plains Connector" encompass the entire development, including proposed transmission lines and facilities in Montana.

As proposed, North Plains Connector will extend approximately 422 miles from near Colstrip, Montana to two separate end points in North Dakota—one near the town of Center in Oliver County and the other near St. Anthony in Morton County (see Figure 1.0-1 and Appendix A). North Plains Connector is a bidirectional high voltage electric transmission line system and associated facilities designed to move electricity east or west between the Eastern and Western Interconnections (also referred to as the eastern grid and western grid, respectively) in response to the growing need to move power across long distances to improve the reliability and resiliency of the grid. The Eastern and Western Interconnections are the two largest electrical grids in North America (see Figure 1.0-2). Specifically, North Plains Connector will connect the Western Electricity Coordinating Council (WECC) electrical power markets in the western grid with the Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP) of the eastern grid. North Plains will transport power without preference towards a particular generation technology. Electric utilities, cooperatives, government entities, corporate energy providers, or independent generators in the WECC, MISO, or SPP regional power systems may own transmission capacity rights or an interest in North Plains Connector, or both.

North Plains is a joint venture between North Plains Connector Holdings LLC, a subsidiary of Grid United LLC (Grid United), and Pattern NPC Transmission LLC (Pattern). Grid United is a Houston, Texas-based company developing energy infrastructure to power the future. Grid United is focused on the infrastructure needed to make the United States power grid more modern, efficient, reliable, and secure. Grid United is the majority investor and has led Project development efforts, including land acquisition, survey, stakeholder relations, and permitting efforts. Pattern is an energy infrastructure development and operations company with recent HVDC transmission construction experience. Pattern is joining North Plains as a minority investor and will support Project execution and construction. A discussion of North Plains' policies and commitments to limit the environmental impact of its facilities is included in Appendix B.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

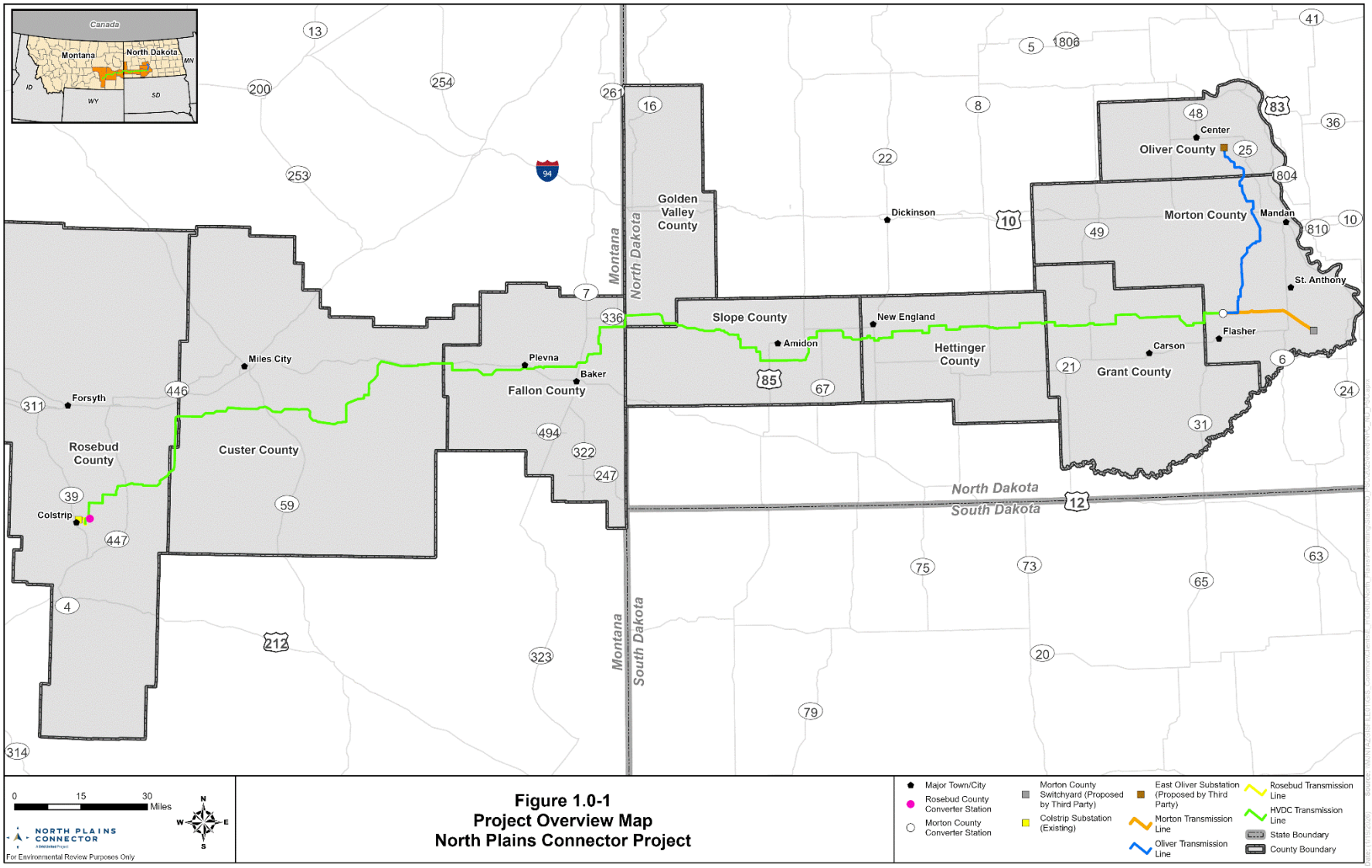
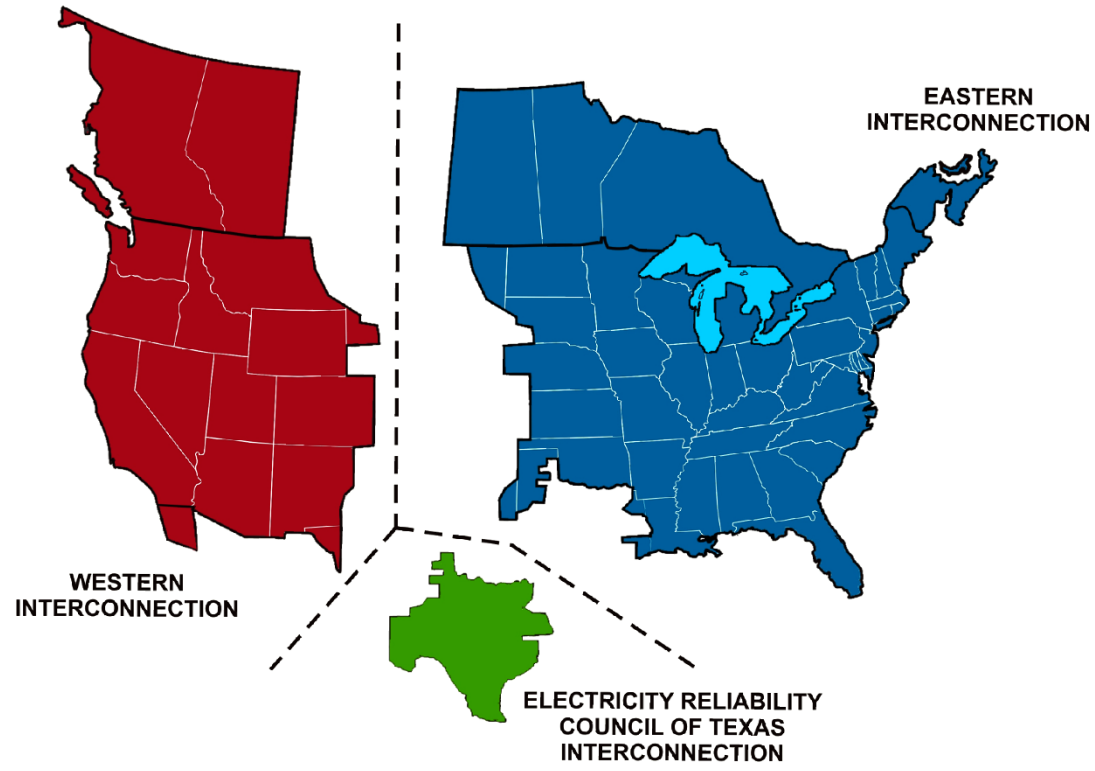


Figure 1.0-1
Project Overview Map
North Plains Connector Project



Source: DOE, 2025

NORTH PLAINS CONNECTOR
A Grid United Project

For Environmental Review Purposes Only

Figure 1.0-2
North American Electric Reliability Corporation Interconnections
North Plains Connector Project

1.1 PROJECT SUMMARY

North Plains proposes to site, construct, and operate the Project in Golden Valley, Slope, Hettinger, Grant, Morton, and Oliver counties, North Dakota. The Project will involve constructing new permanent electric transmission line segments (the centerlines of these segments are also referred to as the Project Route) and associated facilities. The facilities are presented here to provide a comprehensive understanding of the overall Project.

The Project's new permanent electric transmission lines and associated facilities will include the following:

- High-Voltage Direct Current (HVDC) Transmission Line – This segment of the Project will consist of an approximately 168-mile-long, 525-kilovolt (kV) HVDC transmission line segment extending from the Montana-North Dakota state line through Golden Valley, Slope, Hettinger, Grant, and Morton counties and terminate at the Morton County Converter Station.

- Oliver Transmission Line – This segment of the Project will consist of an approximately 52-mile-long, 345-kV alternating current (AC) transmission line segment located in Oliver and Morton counties, North Dakota. The line will extend east and north from the Morton County Converter Station in Morton County to the East Oliver Substation in Oliver County, North Dakota.

- Morton Transmission Line – This segment of the Project will consist of an approximately 22-mile-long, 345-kV AC transmission line segment located in Morton County, North Dakota. The line will extend east and southeast from the Morton County Converter Station to the Morton County Switchyard.

- Morton County Converter Station – The AC/ direct current (DC) converter station will be located in Morton County, North Dakota and serve as the connection point between the HVDC Transmission Line, Oliver Transmission Line, and Morton Transmission Line.

- Fiber Repeater Stations – The Project will include 2 or 3 fiber repeater stations along and connected to the HVDC Transmission Line to mitigate signal loss in the optical power ground wire (OPGW).

The Project will also include appurtenances and equipment, including OPGW and grounding components. The Project will require temporary workspaces during the construction phase to access the construction site, access structure locations, stage equipment and materials, splice wires and conductor lines, and install the various Project components. Sections 1.6, 4.0, and 5.0 provide a detailed description of these components and their locations, design considerations, and the construction process that will be used to build the Project.

The Project will connect to the following facilities, which will be permitted, owned, and operated by other separate entities:

- East Oliver Substation – The planned East Oliver Substation is a 345-kV substation under development by Minnesota Power as part of a separate, independent project. The East Oliver Substation is being developed independently from North Plains as a part of the Minnesota Power HVDC Modernization Project that was approved by the Commission on June 4, 2025, in case number PU-24-

381. For North Plains, the East Oliver Substation will be expanded to serve as the interconnection point to MISO for the eastern grid.

- Morton County Switchyard – The Morton County Switchyard is under development and will be owned and operated by Basin Electric Power Cooperative. The switchyard will be located in Morton County, North Dakota and serve as the connection point between the Morton Transmission Line and the interconnection to the SPP system for the eastern grid.

The Montana facilities are mentioned in this Application to provide an understanding of the Project as a whole. However, Montana facilities are not discussed further in this Application as they are not subject to the Commission's jurisdiction under the North Dakota Energy Conversion and Transmission Facility Siting Act, North Dakota Century Code (NDCC) Chapter 49-22 (Siting Act).

- Rosebud Transmission Line – A new 500-kV AC electrical transmission line segment in Rosebud County, Montana. The Rosebud Transmission Line will extend east from the existing Colstrip Substation, owned by a third-party, to the new Rosebud County Converter Station in Rosebud County. The Rosebud Transmission Line will consist of two separate, parallel circuits, consisting of one 3.2-mile segment and another 2.8-mile segment connecting the existing Colstrip Station with the Rosebud County Converter Station. Additionally, two 0.3- and 0.4-mile single-circuit lines connect the converter station and substation that are collectively part of the Rosebud County Converter Station. The Colstrip Substation will serve as the interconnection point to the WECC power system for the western grid.

- Rosebud County Converter Station – The AC/DC converter station will be located in Rosebud County, Montana and serve as the connection point between the HVDC Transmission Line and the Rosebud Transmission Line.

- HVDC Transmission Line – The Montana portion of the HVDC Transmission Line will consist of an approximately 174-mile-long, 525-kV HVDC transmission line segment extending from the Colstrip Converter Station through Rosebud, Custer, and Fallon counties to the Montana-North Dakota state line.

1.2 PROJECT DEVELOPMENT HISTORY

1.2.1 Identification of Potential Endpoints

North Plains Connector originated with the goal of connecting the WECC in the Western Interconnection and SPP and MISO in the Eastern Interconnection regions of the U.S. electric grid to bolster the reliability and resiliency of both regions. Starting in 2021, North Plains conducted an engineering analysis and transmission line study to identify the best options for establishing the targeted interregional connections. North Plains continued these studies over the next couple of years and engaged in discussions with various regional utilities and Regional Transmission Organizations. The studies, stakeholder engagement, and the route development process discussed in the following sections led to the identified interconnection points at the planned East Oliver Substation (connecting to MISO), the proposed Morton County Switchyard (connecting to SPP), and the existing Colstrip Substation in Montana (connecting to WECC).

1.2.2 Initial Route Development Process

As an initial step in the route development process, North Plains conducted desktop routing studies to identify potentially viable preliminary routes between the potential endpoints that complied with applicable regulatory requirements, including avoiding and/or minimizing potential human and environmental impacts. North Plains used routing analysis software to identify colocation opportunities and routing constraints to develop initial routes between the proposed endpoints. The routing software incorporated publicly available geographic information systems (GIS) datasets that were weighted to generate multiple alternative routes. Weighting considerations included project specifications, site selection criteria, overall transmission line length, encroachment into sensitive or restricted areas, avoidance of topographical constraints (e.g., rugged terrain), and utility and road colocation opportunities. The initial software analysis route was used to generate a starting point for project design. As more information was gathered, North Plains adjusted the initial software route analysis to address more detailed environmental resource considerations and engineering constraints. As discussed further in the next section, this desktop analysis yielded initial possible routes that North Plains then presented to federal, state, and local agencies, tribes, landowners, and other stakeholders.

1.2.3 Stakeholder-First Route Development

Since the Project's inception, North Plains' goal has been to develop the Project with a stakeholder-first approach that prioritizes the input of landowners, agencies, and tribal representatives. To implement this stakeholder-first approach, North Plains presented the preliminary desktop routes to landowners, local officials, agencies, and tribal representatives in 2022 to obtain feedback. Based on the input received, North Plains made routing adjustments and began securing survey permission from landowners and federal agencies (where applicable) to conduct environmental and cultural field surveys. North Plains also continued to analyze and further define the potential locations for the converter station and the MISO and SPP interconnection points.

During this stage of the routing process, North Plains engaged with landowners individually to gather property-specific information, identify potential concerns, and try to align route selection with landowner input to the extent possible. North Plains also incorporated field survey results, as well as continued feedback from agencies and other stakeholders, to further refine the route. This iterative routing process required close coordination with landowners, local officials, agencies, tribes, and other stakeholders, and resulted in multiple years of survey effort and consultation. Additional details regarding agency and other stakeholder consultation are provided in Section 7.2, and survey efforts and results are discussed further in Section 6.0.

Throughout route development, North Plains also held multiple public engagement events and open houses accessible to residents and landowners near the Project. The public engagement events and open houses played a crucial role in promoting transparency, fostering dialogue, and incorporating public input into the decision-making process. Additional details on the public engagement events and open houses, including a list of all the event dates, are included in Sections 7.2.21 and 7.2.22.

1.2.4 Land Rights Acquisition and Local Permitting

The proposed Project Corridor and Route are the result of the extensive coordination and survey efforts discussed in Section 1.2.3. Within the Project Corridor, 227 private landowners own approximately 226 miles, or 94 percent of the Project Route. The remaining 4 percent, or

approximately 15 miles of the Project Route, is on state and federally owned lands. As of February 2026, approximately 99 percent of the private landowner easements have been secured for the Project. North Plains will continue to collaborate closely with the remaining landowners to finalize agreements.

As described in Sections 2.1 and 7.2.17, the Project has obtained Conditional Use Permits (CUP) from Golden Valley, Slope, Hettinger, and Grant counties and Havelock Township in Hettinger County (see Appendix E). In addition, North Plains is pursuing a Special Use Permit (SUP) in Morton County for the Morton County Converter Station and a CUP in Oliver County for the Oliver Transmission Line. Once issued, the corresponding permit documentation will be submitted to the Commission.

1.2.5 Interconnection Requests

North Plains submitted interconnection requests to MISO in June 2023 and December 2025 to facilitate the connection of the Project to the planned East Oliver Substation and an interconnection request to SPP in May 2022 to facilitate the connection of the Project to the new Morton County Switchyard.

The SPP Transmission Working Group endorsed the North Plains Connector Planning Study in May 2025 identifying a minor amount of network upgrades to interconnect to the SPP system reliably. MISO is currently conducting studies to assess the impact of the Project on their surrounding transmission system, including identifying any potential upgrades or modifications needed to maintain grid reliability. The results of these studies will ensure the Project is safely integrated into the existing grid infrastructure in accordance with required technical and regulatory standards.

1.3 PURPOSE AND NEED

1.3.1 Project Need

Transmission infrastructure forms the backbone of the nation's power system, ensuring that Americans have constant access to affordable and reliable electricity to power homes, businesses, and communities. The electrical grid needs significant investment in new transmission, maintenance upgrades, and modernization to meet rapidly changing market demands.

While the U.S. has an abundance of energy generation resources spread throughout the country, these resources are not always located in proximity to or connected to load centers; thus, the nation must rely on a highly functioning, effectively connected grid to deliver energy from generation to load. Complicating the nation's electrical system, the continental U.S. contains three separate grids, known as interconnections, as shown on Figure 1.0-2. These three grids – the Western Interconnection, Eastern Interconnection, and the Texas Interconnection (or Electric Reliability Council of Texas) – are managed independently and are poorly connected with one another. As illustrated in Figure 1.3-1, seven "cross-seam" connections exist between the Western and Eastern Interconnections; however, these small back-to-back DC connections are located in remote locations at the very edge of the seam and serve localized needs. On average, these connections are around 200 megawatts in capacity and are designed to meet the load obligations of nearby utilities or wholesale power providers rather than to realize larger-scale integration between the interconnections. The Project, with a capacity of 3,000 megawatts,

represents a significantly larger transmission development intended to enhance regional connectivity.

This grid structure has functioned for several decades, but changing market dynamics requires the development of a more robust system. Electrical energy consumption is increasing across the U.S. The U.S. Energy Information Administration's (EIA) 2025 Annual Energy Outlook estimates that total electricity consumption across all sectors could increase by 50 percent between 2024 and 2050 (EIA, 2025). Based on recent studies, demand is anticipated to grow significantly across MISO, SPP, and WECC. MISO's peak demand is projected to increase at an average annual rate of 1 percent to 2 percent per year, with gross energy consumption rising 1.9 percent to 3.3 percent per year through 2044 (MISO, 2024a; MISO, 2024b). Similarly, SPP's net peak demand is expected to grow at an average annual rate of approximately 1.95 percent per year, increasing from 54,987 MW in 2024 to 60,560 MW in 2029 (SPP, 2024). WECC's peak demand and annual electricity consumption are expected to increase at an average annual rate of approximately 1.9 percent per year through 2034, with peak demand increasing from 164,000 megawatts in 2025 to 193,000 megawatts in 2034 (WECC, 2024). Traditional capacity increases from performing minor system upgrades or adding new generation are unable to keep pace with this rapidly changing market demand.

Additional factors that affect the ability of the U.S. electrical grid to reliably deliver energy to consumers and underscore the need for significant transmission infrastructure investment include the following:

- extreme weather events that affect regional grid resiliency;
- changes in the generation resource portfolio mix that affect reliability by reducing the ability to balance supply and demand in real time; and
- rapid increases in new load from manufacturing and data centers.

The Project directly addresses these needs by enhancing connectivity between the WECC, MISO, and SPP regional power systems and improving overall system reliability and resilience.

1.3.2 Project Interregional Benefits

North Plains Connector will address increasing demand and grid reliability by bridging the interregional gap between the Western Interconnection and SPP and MISO in the Eastern Interconnection. Federal Energy Regulatory Commission Regulations governing the electrical grid will require North Plains Connector to sell transmission capacity without preference towards any particular generation type, enabling the U.S. to pursue all its available generation resources. This high-capacity, bidirectional line is intended to:

- improve reliability and efficiency for both Interconnections by increasing transfer capacity and access to additional generation between markets;
- improve resiliency through bi-directional power flow control, along with dynamic voltage and frequency support, to help maintain grid stability and operational flexibility; and
- mitigate weather-driven system outages by providing a path to quickly and efficiently shift power to where it is needed most.

North Plains Connector will provide these benefits to North Dakota while also benefiting and strengthening the broader regional transmission grid.

1.3.3 Purpose and Benefits of the Project for North Dakota

This Project offers North Dakota a unique opportunity to meet growing energy needs, strengthen the electric grid, lower transmission cost burdens, and expand markets for the state's energy producers.

1.3.3.1 Serving Load Growth

The Project is designed to address the rapidly increasing demand for electricity in North Dakota and the broader region. According to the EIA, U.S. electricity consumption is projected to increase by 50 percent by 2050, with even higher growth rates in the Upper Midwest due to new manufacturing, high-tech industries, and data center development (EIA, 2025). The Project will provide 3,000 megawatts of bidirectional transfer capacity, enabling the movement of large volumes of power from both existing and emerging generation sources. This infrastructure is essential for balancing supply and demand efficiently, ensuring that North Dakota's grid can support economic growth, industrial expansion, and the evolving needs of communities and businesses.

1.3.3.2 Enhancing Grid Reliability

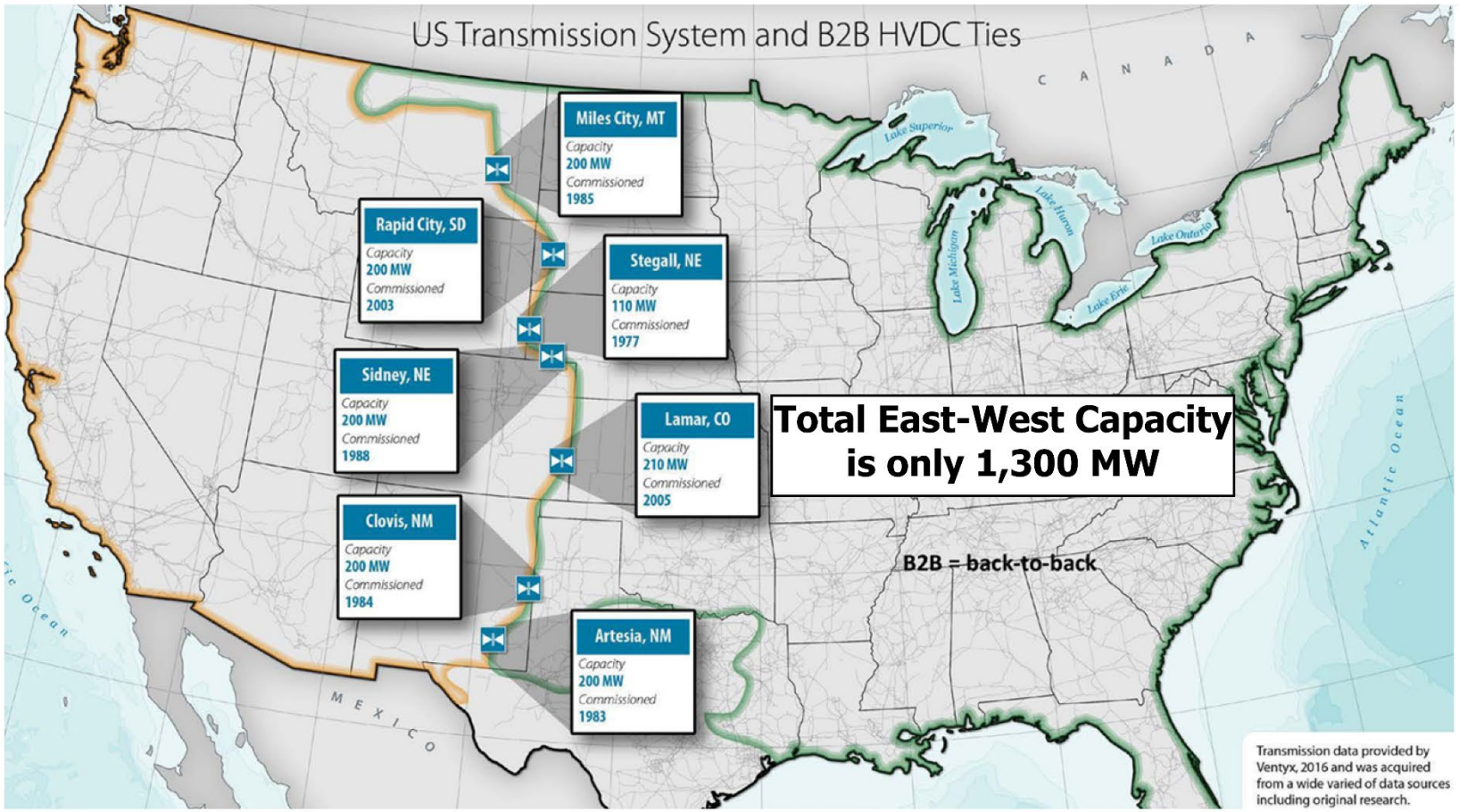
The Project will significantly enhance the reliability and resilience of the regional power grid by providing a new, high-capacity, bidirectional transmission corridor between the Eastern and Western Interconnections. This connection will allow for the rapid transfer of electricity in response to changing market conditions, extreme weather events, or system emergencies. By increasing transfer capacity and access to diverse generation resources, including renewables, dispatchable generation, and inverter-based technologies, the Project will help mitigate outages, improve operational flexibility, and support the integration of new energy resources.

1.3.3.3 Expanding Markets for North Dakota's Energy Producers

The Project will create a new, high-capacity, bidirectional transmission corridor linking the WECC markets in the west with the MISO and SPP markets in the east. This will enable North Dakota energy producers to access previously unreachable markets, including utilities and large energy buyers in the Pacific Northwest, Mountain West, and beyond. By facilitating electricity exports during periods of surplus and enabling imports during times of need, the Project can help attract new investment, stimulate local economic growth, and strengthen North Dakota's position as a national energy leader.

1.3.3.4 Proven Model

North Dakota has a proven track record of leveraging strategic transmission investments to drive economic growth and energy leadership. The success of HVDC projects such as Square Butte and the Nexus Line in the late 1970s enabled the efficient delivery of electricity from North Dakota power plants to distant markets, laying the foundation for the state's energy export economy. The North Plains Connector builds on this legacy by introducing advanced voltage source converter HVDC technology, expanding transfer capacity, improving reliability, and unlocking access to broader regional and national markets. This positions North Dakota to continue its leadership in U.S. energy production and export.



NORTH PLAINS CONNECTOR

For Environmental Review Purposes Only

Figure 1.3-1
Western and Eastern Interconnections Capacity
North Plains Connector Project

1.4 POTENTIAL PROJECT INVESTORS

North Plains and ALLETE, Inc. (ALLETE) are jointly developing the Project. Each of the following utilities has signed a non-binding memorandum of understanding (MOU) with North Plains and may acquire either an ownership interest or transmission capacity in North Plains Connector, or both: Portland General Electric, Avista Corporation, NorthWestern Energy, Puget Sound Energy, BHE U.S. Transmission, and Montana-Dakota Utilities Company (MDU). ALLETE has also signed definitive agreements for the ability to acquire ownership and capacity in the Project and is expected to be the Project operator. Minnesota Power, a division of ALLETE, will own and operate the expansion of the planned East Oliver Substation which will serve as the interconnection point to MISO in the Eastern Interconnection. North Plains continues to explore commercial opportunities with additional utilities.

1.5 ALTERNATIVES

North Plains evaluated various alternative methods for serving the need, including alternative endpoints, alternative routes, and alternative transmission technologies; however, the Project, as proposed, addresses the need in the most prudent and reasonable manner. These alternatives were therefore not selected. Below is a discussion of the alternatives evaluated as well as a no action alternative

1.5.1 Alternative Endpoints

Alternative endpoints were analyzed during Project development as part of the initial siting process. However, while these locations were conceptually analyzed, they are not considered feasible alternative endpoints due to factors such as increased distances, greater environmental or land use impacts, and more complex interconnection or permitting requirements. As a result, they were not advanced for further consideration. The proposed endpoints were determined to be the most feasible and efficient endpoints based on technical, regulatory, and logistical considerations.

1.5.2 Alternative Routes

The process of securing agreements with affected landowners played a critical role in determining the proposed route. The successful development of a transmission line project relies on obtaining the necessary property rights and easements from landowners along the route. Factors such as land availability, land use restrictions, and landowner preferences influence the feasibility and practicality of a particular route. Therefore, North Plains thoroughly evaluated different route alternatives and selected a proposed route based on the practicality of obtaining agreements with landowners, fostering community acceptance, and minimizing potential conflicts or regulatory obstacles. This approach prioritizes collaboration and cooperation with landowners, recognizing the importance of their consent and participation in the successful realization of the Project.

As discussed further in Section 1.2, routes other than the proposed Project Route depicted in this Application were assessed throughout the planning process. However, due to various factors, including landowner, agency, Tribal, and other stakeholder input and environmental and engineering constraints, these other routes were not pursued. The Project Route, as proposed, aligns with the exclusion, avoidance, selection, and policy criteria identified in NDAC Section 69-06-08-02, while also meeting Project objectives. In addition, while multiple route options were evaluated, the ability to secure agreements with landowners was a key factor in selecting the proposed Project Route.

During the hearing process, should corridor/route alternatives be identified, North Plains will evaluate the alternative(s) proposed.

1.5.3 AC Transmission as an Alternative to DC

AC transmission was evaluated as an alternative to DC but was not selected for the main transmission segment (also referred to as the HVDC Transmission Line) of the Project due to DC's efficiency and technical advantages over long distances. Compared to AC, DC lines experience lower power losses, require fewer conductors, and use simpler tower designs, resulting in overall material and cost savings for long-haul transmission. While AC is used for shorter segments at each end of the Project, DC is better suited for the 168-mile (341-miles total when considering the segment in Montana) main transmission segment due to its ability to efficiently transmit power between asynchronous grids and support bidirectional flow.

1.5.4 Underground Transmission as an Alternative

Underground transmission is not an alternative to aboveground design due to significant technical and economic drawbacks. While underground transmission lines can reduce visual and certain avian impacts and exposure to weather, they have shorter lifespans, are more difficult and time-consuming to repair, and require costly trenching, buried splice vaults, and specialized materials. Underground transmission lines also have greater impacts on certain resources, such as archaeological sites, unbroken grasslands, and other wildlife habitats. This is because an aboveground transmission line can frequently span these resources with no physical intrusion, whereas an underground transmission line requires a continuous trench and buried splice vaults. The continuous trench and buried splice vaults result in a larger surface disturbance area and greater impacts to soils leading to a greater amount of land reclamation when compared with aboveground transmission lines. With no clear environmental advantage and installation costs several times higher than aboveground lines, underground transmission is not a feasible option for the Project.

1.5.5 No Action Alternative

Under a no action alternative, North Plains Connector would not be constructed, resulting in the inability to achieve the desired enhancements to grid reliability, resilience between service areas with different weather patterns, and cross-grid market access for electricity generators in the region. The existing transmission system in North Dakota would remain unchanged.

Without the implementation of North Plains Connector, the transmission infrastructure would continue to operate under current conditions. This may lead to ongoing limitations in terms of grid reliability, especially during peak demand periods or in the face of extreme weather events. The absence of North Plains Connector would also mean that the anticipated benefits, such as improved access to diverse energy sources and increased interconnection capacity, would not be realized. No action is not an alternative to the Project because it does not meet the identified need or provide the intended benefits, as discussed further in Section 1.3.

1.6 TERMS AND DEFINITIONS

Key terms and definitions used in this Application associated with the Project are defined in Table 1.6-1 below.

TABLE 1.6-1

Terms and Definitions Used in This Application

Term	Definition/Description
Project Route	In accordance with NDCC Section 49-22-03(12), "Route" means the location of an electric transmission facility within a designated corridor and equates to the centerline.
Project Corridor	In accordance with NDCC Section 49-22-03(4), "Corridor" means the area of land where a designated route may be established for an electric transmission facility. The Project Corridor includes the Project Route, right-of-way, and full construction easements for the Morton County Converter Station and fiber repeater stations, along with areas surveyed for cultural and natural resources. The Project Corridor ranges from 300 to 682 feet in width along the Project Route; at the Morton County Converter Station and Morton County Switchyard, the Corridor is wider with a maximum width of 2,078 feet. The Project Corridor is shown on Figures in Appendix A and encompasses approximately 9,850 acres.
Study Area	The Study Area is the area that was studied for the Project. The Study Area is approximately one-mile wide (0.5 mile on either side of the Project Route) and encompasses approximately 150,817 acres. [a] The Study Area is limited to North Dakota.
Right-of-way	The right-of-way is the typical easement along the Project Route that will be maintained during operation of the Project. The right-of-way is typically 200 feet in width, but ranges from 125 to 250 feet wide.
Project workspace	The Project workspace is the area designated for the construction of the Project. The Project workspace includes areas of permanent impact that constitute the final operational footprint, as well as areas required temporarily for initial construction activities. North Plains will not utilize the entire Project Corridor for the construction of the Project.

[a] North Dakota Administrative Code (NDAC) 69-06-05-01(2)(f) states that 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." North Plains proposes a one-mile-wide Study Area, with a 300- to 2,078-foot-wide Project Corridor, the combination of which is sufficient for the Commission to evaluate the factors addressed in NDCC Section 49-22-09.

1.7 PROJECT LOCATION

The Project is located in Golden Valley, Slope, Hettinger, Grant, Morton, and Oliver counties in North Dakota, as shown on Figures A-1 through A-3 in Appendix A. The Project Route is primarily within rural areas, starting at the Montana-North Dakota state line, with interconnections at the Morton County Switchyard in Morton County and the East Oliver Substation in Oliver County. The Project Route and Project Corridor are located on private, state, and federal lands. Approximately 94 percent of the Project Corridor is located on privately owned land, 2 percent of the Project Corridor is located on North Dakota Department of Trust Lands (NDDTL), and 4 percent of the Project Corridor is located on U.S. Forest Service (USFS)-managed National Forest System (NFS) land in North Dakota.

Table 1.7-1 shows the township, range, and sections of the Project Corridor, which includes the Project Route. The Morton County Converter Station will be located in the North 1905.50 feet of the Southwest Quarter of Section 2, Township 135 North, Range 84 West, Morton County, North Dakota.

TABLE 1.7-1

Study Area Public Land Survey System Locations

County	Township	Range	Section [a]
Golden Valley	136N	105W	16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 33, 34, 35, 36
	136N	106W	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
Slope	134N	99W	6, 7
	134N	100W	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	134N	101W	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	134N	102W	1
	135N	98W	5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27

TABLE 1.7-1

Study Area Public Land Survey System Locations

County	Township	Range	Section [a]
	135N	99W	1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 21, 30, 31
	135N	100W	13, 24, 25, 36
	135N	101W	30, 31, 32
	135N	102W	7, 8, 9, 16, 17, 18, 20, 21, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36
	135N	103W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
	135N	104W	1, 2, 3, 4, 5, 6, 11, 12
	135N	105W	1
	136N	104W	30, 31, 32, 33, 34, 35
Hettinger	135N	91W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 18
	135N	92W	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	93W	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	94W	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	95W	1, 2, 3, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21, 22
	135N	96W	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
	135N	97W	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 30
Grant	135N	85W	1, 6, 7, 8, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24
	135N	86W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	87W	1, 2, 3, 4, 5, 6, 9, 11, 10, 12
	135N	88W	1, 2, 3, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18
	135N	89W	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	90W	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
	136N	85W	36
	136N	87W	31, 32, 33, 34
	136N	88W	34, 35, 36
Morton	134N	80W	5, 6
	135N	80W	29, 30, 31, 32
	135N	81W	5, 6, 7, 8, 9, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 36
	135N	82W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	83W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	84W	1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 18, 19
	136N	83W	3, 4, 9, 10, 15, 16, 17, 20, 21, 22, 28, 29, 32, 33, 35, 36
	136N	84W	31, 32, 33, 34
	137N	82W	6
	137N	83W	1, 2, 11, 12, 13, 14, 23, 24, 25, 26, 35, 36
	138N	82W	2, 3, 10, 11, 14, 15, 16, 17, 19, 20, 21, 22, 29, 31, 30
	138N	83W	24, 25, 35, 36,
	139N	82W	4, 5, 6, 8, 9, 15, 16, 17, 20, 21, 22, 27, 28, 33, 34, 35
	140N	82W	5, 6, 7, 18, 19, 29, 30, 31, 32, 33
	140N	83W	1, 12, 13, 24, 25
Oliver	141N	82W	18, 19, 20, 21, 28, 29, 30, 32, 33
	141N	83W	1, 2, 3, 10, 11, 12, 13, 14, 24, 25
	142N	83W	26, 27, 34, 35, 36

[a] Note that the Project Study Area may be located within the section but may not encompass the entire section.

1.7.1 Project Route

Table 1.7.1-1 provides the length of the Project Route for each transmission line segment by county. The Project Route was designed to parallel existing linear features such as existing

transmission lines, section lines, quarter section lines, roadways, and field edges to the greatest extent possible. Paralleling existing linear features typically offers several advantages including reduced environmental impacts, reduced impacts to farming operations, and compatibility with the surrounding landscape.

TABLE 1.7.1-1

Length of the Project Route by County (in miles)

Project Segment	Golden Valley County	Slope County	Hettinger County	Grant County	Morton County	Oliver County
HVDC Transmission Line	13.1	56.2	50.8	41.3	6.6	0.0
Oliver Transmission Line [a]	0.0	0.0	0.0	0.0	41.2	10.5
Morton Transmission Line [a]	0.0	0.0	0.0	0.0	21.8	0.0

[a] The Oliver Transmission Line and Morton Transmission Line are collocated for approximately 3.4 miles.

1.7.2 Project Corridor

The Project Corridor includes the Project Route, right-of-way, and full construction easements for the Morton County Converter Station and fiber repeater stations, along with areas surveyed for cultural and natural resources. The Project Corridor ranges from 300 to 682 feet in width along the Project Route; at the Morton County Converter Station and Morton County Switchyard, the Corridor is wider with a maximum width of 2,078 feet. The additional surveyed area allows for flexibility to address minor adjustments to the Project Route that may arise during construction.

1.7.3 Right-of-Way

The right-of-way is the physical area along the Project Route that is needed to operate the transmission line segments. The right-of-way is the area that will be maintained for the life of the Project. The width of the right-of-way is calculated based on anticipated span lengths and conductor blow out during inclement weather. Maintenance of the right-of-way consists of routine inspections and periodic vegetation maintenance, which includes removing tall woody vegetation that could compromise the integrity of the transmission line.

Operation of the Project will require easements which allow for a typical right-of-way width of approximately 150 to 200 feet. The Oliver and Morton Transmission Lines are collocated for about 3.4 miles in Morton County. Where the Oliver and Morton Transmission Line segments are collocated, the operational right-of-way is 150 to 250 feet wide for each segment, for a total width of 300 to 500 feet. The fiber repeater stations along the HVDC Transmission Line will be located within the right-of-way.

1.7.4 Study Area

The Study Area consists of areas within 0.5-mile of the Project Route in North Dakota and encompasses approximately 150,213 acres.

Table 1.7.4-1 shows the township, range, and sections of the Study Area.

TABLE 1.7.4-1

Study Area Public Land Survey System Locations

County	Township	Range	Section [a]
Golden Valley	136N	104W	30, 31

TABLE 1.7.4-1

Study Area Public Land Survey System Locations

County	Township	Range	Section [a]
	136N	105W	16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 33, 34, 35, 36
Slope	134N	99W	6, 7
	134N	100W	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	134N	101W	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	134N	102W	1
	135N	97W	18, 19
	135N	98W	5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27
	135N	99W	1, 2, 3, 4, 8, 9, 10, 11, 12, 16, 17, 18, 19, 20, 21, 30, 31
	135N	100W	13, 24, 25, 36
	135N	101W	30, 31, 32
	135N	102W	7, 8, 9, 16, 17, 18, 20, 21, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36
	135N	103W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
	135N	104W	1, 2, 3, 4, 5, 6, 11, 12
	135N	105W	1
	136N	104W	30, 31, 32, 33,34, 35
	136N	105W	36
Hettinger	135N	90W	6, 7
	135N	91W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 18
	135N	92W	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	93W	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	94W	5, 6, 7, 8, 9, 10 11, 12, 13, 14, 15, 16, 17, 18
	135N	95W	1, 2, 3, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21, 22
	135N	96W	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
	135N	97W	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30
	135N	98W	13, 24, 25
Grant	135N	85W	1, 6, 7, 8, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24
	135N	86W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	87W	1, 2, 3, 4, 5, 6, 9, 10, 11, 12
	135N	88W	1, 2, 3, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18
	135N	89W	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	135N	90W	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 ,15, 16, 17
	135N	91W	1, 12
	136N	85W	36
	136N	87W	31, 32, 33, 34
	136N	88W	34, 35, 36
Morton	135N	80W	30, 31
	135N	81W	5, 6, 7, 8, 9, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 36
	135N	82W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	83W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
	135N	84W	1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 18, 19
	135N	85W	1, 12, 13, 24
	136N	83W	3, 4, 9, 10, 15, 16, 17, 20, 21, 22, 28, 29, 32, 33, 35, 36
	136N	84W	31, 32, 33, 34
	136N	85W	36
	137N	82W	6
	137N	83W	1, 2, 11, 12, 13, 14, 23, 24, 25, 26, 35, 36
	138N	82W	2, 3, 10, 11, 14, 15, 16, 17, 19, 20, 21, 22, 29, 30, 31
	138N	83W	24, 25, 35, 36
	139N	82W	4, 5, 6, 8, 9, 15, 16, 17, 20, 21, 22, 27, 28, 33, 34, 35

TABLE 1.7.4-1

Study Area Public Land Survey System Locations

County	Township	Range	Section [a]
	140N	82W	5, 6, 7, 18, 19, 29, 30, 31, 32, 33
	140N	83W	1, 12, 13, 24, 25
	141N	82W	32, 33
Oliver	140N	82W	6
	140N	83W	1
	141N	82W	18, 19, 20, 21, 28, 29, 30, 32, 33
	141N	83W	1, 2, 3, 10, 11, 12, 13, 14, 24, 25
	142N	83W	26, 27, 34, 35, 36

[a] Note that the Project Study Area may be located within the section but may not encompass the entire section.

1.7.5 Project Workspace

North Plains will not use the entire Project Corridor to construct the Project. Instead, North Plains will perform construction activities within specific workspaces described in Sections 4.2 and 4.3, referred to as the Project workspace. The Project workspace captures all areas where direct ground disturbance would occur and typically consists of the construction area needed to support construction of structures, pulling and tensioning areas, and access roads. North Plains avoided environmentally sensitive areas wherever possible in the identification of Project workspace. The Project workspace was sited according to the siting criteria outlined in North Dakota Administrative Code (NDAC) Section 69-06-08-02.

While most construction activities will be confined to the Project Corridor, North Plains will require the use of Project workspace and construction access outside of the Project Corridor during construction. In areas where Project workspace outside of the Project Corridor is required, North Plains will secure an agreement with the landowner (to the extent not covered by an existing agreement), conduct any required field surveys, and obtain any necessary permits prior to use. Project workspace outside of the Project Corridor may include contractor laydown yards, wire pulling and tensioning areas, and temporary access roads and overland travel. Construction activities are further discussed in Section 5.1 of this Application.

1.8 LAND ACQUISITION

Along the HVDC Transmission Line, Morton Transmission Line, and Oliver Transmission Line, North Plains has secured or is in the process of securing option agreements for easements with all private landowners as discussed in Section 1.2.4. As of February 2026, approximately 99 percent of the private landowner easements have been secured for the Project. North Plains has signed a purchase option agreement on the parcel where the Morton County Converter Station is located.

The Project crosses lands managed by the NDDTL and the USFS. At the request of NDDTL, North Plains will secure a right-of-way easement from NDDTL following receipt of the Certificate and Route Permit. North Plains is in the process of obtaining a SUP from USFS. The SUP from USFS will be issued following the completion of the National Environmental Policy Act (NEPA) Review and issuance of the Record of Decision (see Section 2.6 for more details).

1.9 SCHEDULE

The total construction timeframe for the Project is anticipated to be approximately three to four years. North Plains anticipates starting construction in 2027 and placing the Project in service by the end of 2032.

North Plains estimates a peak construction workforce of approximately 400 workers in North Dakota. Construction is anticipated to occur year-round. Delays due to weather, material delivery, and natural resource time of year restrictions may extend the construction timeline.

Key schedule milestones are shown in Table 1.9-1.

TABLE 1.9-1

Anticipated Time Schedule

Activity	Anticipated Completion
Obtain County/Township Conditional Use and Special Use Permits	
Golden Valley Conditional Use Permit	Complete
Slope County Conditional Use Permit	Complete
Hettinger County Conditional Use Permit	Complete
Havelock Township, Hettinger County Conditional Use Permit	Complete
Grant County Conditional Use Permit	Complete
Oliver County Conditional Use Permit	First Quarter 2026
Morton County Special Use Permit	Second Quarter 2026
Complete federal environmental review and federal lands acquisition	Third/Fourth Quarter 2026
Obtain the Certificate and Route Permit	Fourth Quarter 2026
Complete private and state lands right-of-way acquisition	Fourth Quarter 2026
Start construction (Montana)	Third Quarter 2027
Start construction (North Dakota)	Third Quarter 2027
Complete construction	Fourth Quarter 2031
Testing operations	First Quarter 2032
Commence commercial operation	Fourth Quarter 2032

1.10 FUTURE ASSOCIATED FACILITIES

North Plains has no plans for additional facilities, upgrades, or improvements for the Project. Should North Plains seek to develop additional facilities in the future, or expand the Project, all necessary permits and approvals would be obtained.

1.11 COST

The total cost of the Project is estimated to be approximately $3.2 billion. The total cost of North Plains Connector is approximately $6 billion.

2.0 REGULATORY FRAMEWORK

This section describes the primary federal and state regulations and guidance the Project must follow, including for routing decisions and environmental review.

2.1 PERMITS AND APPROVALS

Project construction, operation, and maintenance will comply with applicable federal, state, and local permit requirements. Table 2.1-1 summarizes the status of the required major permits, approvals, and consultations. Permits and approvals specific to the Montana portion of North Plains Connector are also included for reference. Appendix C contains a full list of federal, state, and county permits or approvals that have been identified as potentially required for the construction and operation of the Project.

TABLE 2.1-1

Major Environmental Authorizations and Consultations for the North Plains Connector Project

Agency/Tribe	Description of Permit, Approval, or Consultation	Submittal (Anticipated)	Approval (Anticipated)
FEDERAL			
U.S. Department of Energy (Lead Federal Agency)	National Environmental Policy Act (NEPA) Review	August 2024	(September 2026)
Bureau of Land Management	Right-of-Way Grant and Short-Term Right-of-Way under the Federal Land Policy and Management Act	September 2024	(October 2026)
U.S. Department of Agriculture – Agricultural Research Service	Revocable Right-of-Way Permit	September 2024	(October 2026)
U.S. Forest Service	Special Use Permit	September 2024	(December 2026)
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act Consultation Applicant-Prepared Biological Assessment / USFWS Issues Biological Opinion	(February 2026)	(August 2026)
	Non-Purposeful Take Permit for Bald/Golden Eagles	(December 2026)	(June 2027)
U.S. Army Corps of Engineers – Omaha District	Section 404 of the Clean Water Act Nationwide Permit 57 – Electric Utility Line and Telecommunications Activities	(February 2026)	(September 2026)
Federal Lead Agency, Federal and State Land-Managing Agencies, State Historic Preservation Offices, Tribal Historic Preservation Offices, and Consulting Parties	Section 106 of the National Historic Preservation Act Consultation	August 2025	(September 2026)
Federal Lead Agency, Tribal Governments	Government-to-Government Consultation	February 2025	(September 2026)
Federal Aviation Administration	Notice of Construction or Alteration	(at least 45 days prior to construction)	NA
NORTH DAKOTA – STATE			
North Dakota Public Service Commission	Certificate of Corridor Compatibility and Transmission Facility Route Permit	February 2026	(December 2026)
North Dakota Department of Trust Lands (NDDTL)	Right-of-way easement for crossing NDDTL-managed tracts	April 2022	(December 2026)
North Dakota Department of Water Resources	Sovereign Lands Permit	(April 2026)	(July 2026)
North Dakota Department of Environmental Quality	Water Quality Certification under Section 401 of the Clean Water Act (associated with Section 404 Permit)	(February 2026)	(June 2026)
	Temporary Discharge Permit	(June 2027)	(November 2027)
	Authorization to Discharge under the North Dakota Pollutant Discharge Elimination System (NDR11-0000)	(June 2027)	(November 2027)
State Historical Society of North Dakota (SHSND)	Section 106 of the National Historic Preservation Act Consultation	February 2025	(September 2026)

TABLE 2.1-1

Major Environmental Authorizations and Consultations for the North Plains Connector Project

Agency/Tribe	Description of Permit, Approval, or Consultation	Submittal (Anticipated)	Approval (Anticipated)
North Dakota Department of Transportation	Utility Occupancy, Driveway, Oversize / Overweight Permits	(November 2026)	(July 2027)
NORTH DAKOTA – LOCAL			
Golden Valley, Slope, Hettinger, Grant, Morton, and Oliver Counties and Havelock Township	Conditional/Special Use Permits	October 2024-(March 2026)	November 2024-(April 2026)
County Weed Boards	Weed Plan Approvals	August 2023-May 2024	September 2023-(March 2026)
County Road Authorities	Utility, Driveway, Oversize / Overweight Permits	(March 2027)	(July 2027)
County Floodplain Administrators	Floodplain Development Permits	(March 2027)	(May 2027)
MONTANA – STATE			
Montana Department of Environmental Quality	Certificate of Compliance	September 2024	(September 2026)
	Water Quality Certification under Section 401 of the Clean Water Act (associated with Section 404 Permit)	(February 2026)	(June 2026)
	Short-Term Water Quality Standard for Turbidity Related to Construction Activity (318)	(February 2026)	(May 2026)
	General Permit for Stormwater Discharges Associated with Construction Activity (MTR100000)	(June 2027)	(November 2027)
	Construction Dewatering General Permit (MTG070000)	(June 2027)	(November 2027)
Montana Sage Grouse Habitat Conservation Program, Montana Sage Grouse Oversight team	Sage Grouse Avoidance and Mitigation Plan	(February 2026)	(July 2026)
Montana Department of Natural Resources and Conservation, State Board of Land Commissioners	Right-of-way grant or easement for Montana Department of Natural Resources and Conservation State Trust Land crossings	September 2024	(August 2026)
	Natural Streambed and Land Preservation Act (310 Law)	(February 2026)	(July 2026)
	Montana Land-Use License or Easement on Navigable Waters	(February 2026)	(August 2026)
Montana State Historic Preservation Office	Section 106 of the National Historic Preservation Act Consultation	February 2025	(September 2026)
Montana Department of Transportation	Utility Occupancy, Driveway, Oversize / Overweight Permits	(November 2026)	(July 2027)
MONTANA – LOCAL			
County Road Authorities	Utility, Driveway, Oversize / Overweight Permits	(March 2027)	(July 2027)
County Weed Boards	Weed Plan Approvals	(March 2026)	(May 2026)
County Floodplain Administrator	Floodplain Development Permits	(February 2027)	(April 2028)

2.2 SITING ACT AND SITING RULES

The Siting Act requires the proponent of a transmission facility to obtain a Certificate and a Route Permit from the Commission in order to locate, construct, and operate the facility in the State of North Dakota. An application for a Certificate and a Route Permit must meet certain criteria set forth in the Siting Act, as well as in NDAC Article 69-06 (Siting Rules). In this Application, North Plains presents the information required by the Siting Act and the Commission's Siting Rules. Specifically, North Plains has considered the exclusion and avoidance areas, the selection

criteria, and the policy criteria in the design of the Project, in accordance with NDCC Chapter 49-22 and NDAC Section 69-06-08-02. Information regarding Project design and technical information has been included in this Application to allow a thorough understanding of the Project and to aid in reviewing by the Commission, regulatory agencies, and the public.

2.3 TEN YEAR PLAN

In accordance with NDCC Section 49-22-04 and NDAC Chapter 69-06-02, North Plains submitted a Ten Year Plan for years 2024 through 2034 on June 26, 2024. North Plains' Ten Year Plan is consistent with this Application for a Certificate and Route Permit (see Appendix D).

2.4 COUNTY ZONING REQUIREMENTS

Electric transmission facilities are conditional uses in Golden Valley, Slope, Hettinger, Grant, and Oliver counties and Havelock Township in Hettinger County. The Morton County Converter Station requires a SUP, zoning map amendment, variance, and subdivision approval in Morton County; however, the Morton County Land Use Code excludes transmission facilities from regulation (except for compliance with floodplain permitting requirements). The Project has obtained CUPs from Golden Valley, Slope, Hettinger, and Grant counties and Havelock Township in Hettinger County. North Plains is pursuing a SUP in Morton County and a CUP in Oliver County. Once issued, the corresponding permit documentation will be submitted to the Commission. Copies of the local approvals received as of the filing of this Application are provided in Appendix E.

2.5 MONTANA MAJOR FACILITY SITING ACT

North Plains Connector requires engagement with the Montana Department of Environmental Quality to comply with the requirements of both the Montana Major Facility Siting Act and the Montana Environmental Policy Act processes. North Plains submitted an application for a Certificate of Compliance to the Montana Department of Environmental Quality on September 18, 2024. An amended application was submitted to the Montana Department of Environmental Quality on September 12, 2025, and was deemed complete by the Montana Department of Environmental Quality on September 26, 2025.

2.6 NATIONAL ENVIRONMENTAL POLICY ACT

North Plains Connector will cross federal lands managed by the USFS in North Dakota and the U.S. Bureau of Land Management (BLM) and the U.S. Department of Agriculture – Agricultural Research Station (USDA ARS) in Montana. Each of these crossings will require federal right-of-way authorizations from USFS, BLM, and the USDA ARS, respectively. The U.S. Department of Energy (DOE) is serving as the lead federal agency for performing environmental review and coordination through its authorities under Section 216(h) of the Federal Power Act. First established in the Energy Policy Act of 2005, Federal Power Act Section 216(h) provides DOE the authority to oversee and set binding schedules for the timely coordination of federal authorizations, including required federal environmental reviews and consultations. In addition, DOE may further coordinate with other federal agencies, Tribes, and state agencies to facilitate the overall siting and permitting for the Project. Under these authorities, DOE is the Lead Federal Agency for the NEPA review, and consultations under Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act (NHPA).

Under its Section 216(h) coordinating role and pursuant to its NEPA lead agency responsibility, the DOE requested that North Plains produce a series of Resource Reports that provide necessary information to enable the DOE to conduct the NEPA review and to support future consultations under Section 7 of the ESA and Section 106 of the NHPA. North Plains submitted 12 Resource Reports to the DOE on August 28, 2024. The DOE published a Notice of Intent to prepare an Environmental Impact Statement (EIS) for North Plains Connector in the Federal Register on October 25, 2024. To comply with NEPA and Montana Environmental Policy Act, DOE and Montana Department of Environmental Quality are jointly preparing an EIS to consider the environmental effects of siting, constructing, operating, and maintaining North Plains Connector. The DOE and Montana Department of Environmental Quality issued the Draft EIS for public comment on January 9, 2026.

The EIS will also satisfy the NEPA review required for federal funding. Through the Montana Department of Commerce, the Project was conditionally awarded $700 million in funding from the DOE through the Grid Resilience and Innovation Partnerships (GRIP) Program under Funding Opportunity Announcement (FOA) 3195. The grant is aimed at strengthening grid resilience and developing interregional transmission infrastructure. The Project was selected for its capacity to improve energy reliability and adaptability across the Eastern and Western Interconnections.

As part of the GRIP grant application process, a group of interregional utilities responsible for the generation, transmission, and distribution of electricity to consumers signed letters of support for the Project. The companies included ALLETE, Avista Corporation, Minnkota Power Cooperative, MDU, NorthWestern Energy, Otter Tail Power Company, Portland General Electric, and Puget Sound Energy. Minnkota Power Cooperative, MDU, and Otter Tail Power Company serve communities across the state and, along with ALLETE, operate power generation facilities within North Dakota. Additionally, the North Dakota Transmission Authority (NDTA) played a key role in supporting the GRIP application by providing a letter of support in April 2024. NDTA highlighted the alignment of the Project with its mission to develop transmission infrastructure that enhances the production, transportation, and utilization of North Dakota's electric energy.

3.0 SITE SELECTION CRITERIA

North Plains has designed the Project based on various technical and environmental criteria including applicable federal and state regulatory routing criteria such as the siting criteria outlined in NDAC Section 69-06-08-02. Additional design considerations included stakeholder feedback, routing experience, engineering and environmental considerations, technical and reliability considerations, constructability constraints, and cost.

3.1 EXCLUSION AREAS

Per NDAC Section 69-06-08-02(1), which implements NDCC Section 49-22-05.1, the geographical areas listed in Table 3.1-1 shall be excluded in the consideration of a transmission facility route. Exclusion areas may be located within a corridor, but at no point shall such an area or areas encompass more than 50 percent of the corridor width unless there is no reasonable alternative. NDAC Section 69-06-08-02 further specifies that a buffer zone of a reasonable width to protect the integrity of the area shall be included. Natural screening may be considered in determining the width of the buffer zone. Exclusion areas are shown on Figure A-4 in Appendix A.

TABLE 3.1-1

Exclusion Areas

North Dakota Administrative Code Section 69-06-08-02(1)	Crossed by Project Route	Present within Project Corridor	Proposed Buffer Zone	Section Addressed
1. EXCLUSION AREAS.				
a. Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.4, 6.6, Appendix A
b. Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.4, 6.6, Appendix A
c. County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.6, Appendix A
d. Areas critical to the life stages of threatened or endangered animal or plant species.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.11
e. Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.11
f. Areas within one thousand two hundred feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.3
g. Areas within thirty feet on either side of a direct line between an ICBM launch facility and a missile alert or launch control facilities to avoid microwave interference. This restriction only applies to aboveground structures, not to surface features, such as roads, or belowground infrastructure.	No	No	No impacts are anticipated, and no buffer zone is proposed.	6.3

3.2 AVOIDANCE AREAS

In accordance with NDAC Section 69-06-08-02(2), which implements NDCC Section 49-22-05.1, the geographical areas listed in Table 3.2-1 shall not be considered in the routing of a transmission facility unless the applicant shows that, under the circumstances, there is no reasonable alternative. Avoidance areas may be located within a corridor, but at no point shall such an area or areas encompass more than 50 percent of the corridor width unless there is no reasonable alternative. NDAC Section 69-06-08-02 further specifies that a buffer zone of a reasonable width to protect the integrity of the area shall be included. Natural screening may be considered in determining the width of the buffer zone. Avoidance areas are shown on Figure A-4 in Appendix A.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

TABLE 3.2-1

Avoidance Areas

North Dakota Administrative Code Section 69-06-08-02(2)	Crossed by Project Route	Present within Project Corridor [a]	Proposed Buffer Zone	Section Addressed
2. AVOIDANCE AREAS.				
a. Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	Yes, the Little Missouri National Grassland (LMNG), a designated national grassland, is crossed by the Project Route. Given the Project's interconnection points and the LMNG's north-south extent of approximately 109 miles in western North Dakota, there is no reasonable alternative but to cross the national grassland.	Yes, the LMNG, a designated national grassland, is crossed by the Project Corridor. Given the Project's interconnection points and the LMNG's north-south extent of approximately 109 miles in western North Dakota, there is no reasonable alternative but to cross the national grassland, which encompasses more than 50 percent of the width of the Project Corridor.	A buffer zone was established to avoid existing resources within or near the Little Missouri National Grassland, such as: Theodore Roosevelt National Park, Inventoried Roadless Areas, Rough Rider State Park, Burning Coal Vein Park campground, and notable cultural sites like the Battle of the Badlands.	6.4, 6.6, Appendix A
b. Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	Yes, the Little Missouri River, a state scenic river, is crossed by the Project Route. Due to the Project's interconnection points and the geographic location of the Little Missouri River, which starts in the southwest corner of North Dakota and flows north, then east to Lake Sakakawea, there is no reasonable alternative but to cross the river.	Yes, the Little Missouri River, a state scenic river, is present within the Project Corridor and the perpendicular crossing of the river encompasses more than 50 percent of the width of the Project Corridor. Due to the Project's interconnection points and the geographic location of the Little Missouri River, which starts in the southwest corner of North Dakota and flows north, then east to Lake Sakakawea, there is no reasonable alternative but to cross the river.	No impacts to the Little Missouri River are anticipated as the Project will span the river. A buffer zone will be established where no construction or heavy equipment operation will occur around the river. Best management practices (BMPs) will be implemented to prevent accidental intrusion.	6.6, 6.9, Appendix A

TABLE 3.2-1

Avoidance Areas

North Dakota Administrative Code Section 69-06-08-02(2)	Crossed by Project Route	Present within Project Corridor [a]	Proposed Buffer Zone	Section Addressed
c. Historical resources which are not specifically designated as exclusion or avoidance areas.	Yes, historic resources are present in the Project Corridor; structures will span and the Project workspace will avoid, where possible.	Yes, historic resources are present in the Project Corridor, which the Project workspace will avoid. In some instances, historic resource site boundaries encompass more than 50 percent of the Project Corridor. However, there is no reasonable alternative since shifting the Project Corridor will either result in 1) encountering additional historic resource sites, 2) shifting onto an adjacent biological resource, 3) shifting into an area with topographical or engineering constraints, 4) shifting onto an adjacent parcel where North Plains does not have an option agreement, and/or 5) causing an increased impact to landowners or farming activities.	No impacts to historical resources are anticipated, and a buffer zone designated by the North Dakota State Historic Preservation Office (SHPO) (on private and state lands) and USFS (on federal lands) has been established around the sites where avoidance is required. Within the buffer zone, no construction or heavy equipment operation will occur without approval from SHPO or USFS, depending on land ownership. North Plains will adhere to the Programmatic Agreement developed between DOE, SHPOs, cooperating agencies, Tribes, and North Plains.	6.4, Appendix I
d. Areas which are geologically unstable.	Yes, areas of landslide deposits mapped by the North Dakota Geological Survey (NDGS) are crossed by the Project Route. Since landslide deposits are common in southwest North Dakota, there is no reasonable alternative but to route through such areas. However, the Project structures will span unstable areas, thereby avoiding impacts.	Yes, areas of landslide deposits mapped by the NDGS are within the Project Corridor, some of which encompass more than 50 percent of the Project Corridor. Since landslide deposits are common in southwest North Dakota, there is no reasonable alternative but to route through such areas. However, the Project structures will span unstable areas, thereby avoiding impacts.	No impacts to the Project caused by geologically unstable areas are anticipated. A geotechnical analysis is being performed, and areas which are geologically unstable will be spanned and avoided as necessary. A buffer zone will be established around identified geologically unstable areas to ensure further protection and stability.	6.8, Appendix A
e. Within 500 feet of a residence, school, or place of business. [b]	No residence, school, or place of business is crossed by the Project Route.	No residence, school, or place of business is within the Project Corridor. One residence is located within 500 feet of the Project right-of-way.	For the residence within 500 feet of the Project right-of-way, North Plains sited the Project Route per the residence owner's request, and has obtained a waiver in accordance with NDCC Section 49- 22-05.1(3). The residence is a hunting cabin used seasonally by the owner.	6.3, Appendix A, Appendix F
f. Reservoirs and municipal water supplies.	No.	No.	No impacts are anticipated, and no buffer zone is proposed.	6.2
g. Water sources for organized rural water districts.	No	No.	No impacts are anticipated, and no buffer zone is proposed.	6.2

TABLE 3.2-1

Avoidance Areas

North Dakota Administrative Code Section 69-06-08-02(2)	Crossed by Project Route	Present within Project Corridor [a]	Proposed Buffer Zone	Section Addressed
h. Irrigated land. NDCC Section 49-22-05.1 was amended and subsection 2 does not allow prime farmland, unique farmland, or irrigated land to be identified as exclusion and/or avoidance areas.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
i. Areas of recreational significance which are not designated as exclusion areas.	No.	No.	No impacts are anticipated, and no buffer zone is proposed.	6.6

[a] Features present within Project Corridor encompass 50 percent or less of the Project Corridor's width unless otherwise indicated.

[b] This avoidance area may be waived by the owner of the inhabited rural residence in writing.

3.3 SELECTION CRITERIA

In accordance with NDAC Section 69-06-08-02(3), a corridor or route shall be designated when it is demonstrated to the Commission by the applicant that any significant adverse effects resulting from the location, construction, and operation of the facility as they relate to the criteria listed in Table 3.3-1 will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum.

TABLE 3.3-1

Selection Criteria

North Dakota Administrative Code Section 69-06-08-02(3)	Description of Project Effect	Section Addressed
3. SELECTION CRITERIA.		
a. The impact upon agriculture:		
(1) Agricultural production.	The construction and operation of the Project will have minimal effect on agricultural production, primarily during the construction phase. Temporary disruptions may include restricted access to fields, soil compaction from heavy machinery, and damage to crops. However, the Project has been designed to minimize these impacts to the extent practicable and damages will be repaired or landowners will be compensated in accordance with the terms of their agreement with North Plains. Once operational, the Project will have a minimal footprint, allowing agricultural activities to continue largely uninterrupted. Regular maintenance will be conducted with the same level of care, ensuring that any necessary access is coordinated to minimize disruption and maintain the productivity of the farmland.	6.7
(2) Family farms and ranches.	The construction and operation of the Project will have minimal effect on family farms and ranches. During construction, temporary disruptions may include restricted access to farm and ranch lands, interference with livestock movement, and potential impacts to infrastructure such as fences. However, the Project has been designed to minimize these effects to the extent practicable and damages will be repaired or landowners will be compensated in accordance with the terms of their agreement with North Plains. Once operational, the Project will have a minimal footprint, allowing farming and ranching activities to continue largely uninterrupted. Regular maintenance will be conducted with the same level of care, ensuring that any necessary access is coordinated with landowners to minimize disruption and maintain the productivity and operation of family farms and ranches.	6.7
(3) Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	The construction and operation of the Project will have minimal effect on land suitable for irrigation. No landowners have expressed concerns about impacts to irrigation from the Project. Two river valleys within the Project Corridor, along the Little Missouri River and the Heart River, have existing irrigated land. The location of transmission structures relative to the irrigation systems has been negotiated with the respective landowners. Additionally, the Project Route parallels an existing transmission line along the Heart River, thereby reducing the potential for disruption to irrigation practices.	6.7
(4) Surface drainage patterns and ground water flow patterns.	The construction and operation of the Project will have a minimal effect on surface drainage patterns. Project infrastructure will be built to avoid impacts to surface waters to the extent practicable and will be designed in such a manner that runoff from the upper portions of the watershed can flow unrestricted to the lower portion of the watershed. Temporarily disturbed areas will be returned to their pre-construction conditions to the extent possible. The construction and operation of the Project will have a minimal effect on groundwater flow patterns. If groundwater is disturbed during construction, it is expected to return to its natural flow pattern once construction is complete, with no significant long-term impact anticipated. The Project includes a limited amount of below-ground infrastructure, mainly consisting of concrete foundations for transmission line structures.	6.9, Appendix I

TABLE 3.3-1

Selection Criteria

North Dakota Administrative Code Section 69-06-08-02(3)	Description of Project Effect	Section Addressed
b. The impact upon:		
(1) Sound-sensitive land uses.	The Project has been designed to minimize impacts to sound-sensitive land uses such occupied residences. To minimize the effects of construction noise, North Plains will limit construction to daytime hours to the extent possible, maintain construction equipment in good working order, and use mufflers for equipment exhaust. North Plains will ensure compliance with applicable state and local noise regulations.	6.3
(2) The visual effect on the adjacent area.	The Project will be visible to landowners and travelers along roadways. Existing transmission lines are present in parts of the viewshed.	6.5
(3) Extractive and storage resources.	The construction and operation of the Project will have no effect on currently operational extractive and storage resource operations, which commonly include gravel, coal, natural gas, and oil in southwest North Dakota.	6.8
(4) Wetlands, woodlands, and wooded areas.	Permanent impacts to wetlands will be avoided or minimized as practicable. Unavoidable impacts to jurisdictional wetlands will be permitted through the U.S. Army Corps of Engineers (USACE). The construction and operation of the Project will have minimal effect on woodlands and wooded areas. To maintain safety and reliability, trees that could interfere with the energized conductors will be removed from the Project Corridor. North Plains will ensure that effects on woodlands and wooded areas are minimized to the extent practicable. Trees and shrubs removed during construction will be replaced according to the Commission's mitigation specifications.	6.9, 6.10, Appendix I
(5) Radio and television reception, and other communication or electronic control facilities.	No impacts to electronic communications are anticipated.	6.2
(6) Human health and safety.	The construction and operation of the Project is anticipated to have no adverse effects on human health and safety. Human health and safety risks related to the construction and operation of the Project will be mitigated in accordance with workplace safety regulations. Safety risks associated with the operation of the Project are related to the electrical infrastructure. The Project will be designed and constructed to meet or exceed the standards of the National Electrical Safety Code. Regular maintenance and inspections will be performed throughout the life of the Project to ensure its continued integrity. Safety precautions will be strictly followed during construction to protect workers and the public.	6.3
(7) Animal health and safety.	The construction and operation of the Project will have minimal effects on animal health and safety. During construction and operation, the Project will adhere to environmental guidelines and best management practices to minimize habitat disturbance and harm to animals. Construction activities will be coordinated with landowners to minimize the potential for impacts to livestock. Additionally, to reduce the potential for bird strikes with electric lines, the Project will be designed in accordance with Avian Powerline Interaction Committee (APLIC, 2012) guidelines where relevant to the Project.	6.11, Appendix I
(8) Plant life.	The construction and operation of the Project will have minimal effects on plant life. Areas temporarily impacted by construction that affect plant life will be reseeded or restored based on the area's pre-construction state and landowner preferences. Trees and shrubs removed during construction will be replaced according to the Commission's mitigation specifications.	6.10, Appendix I

3.4 POLICY CRITERIA

In accordance with NDAC Section 69.06-08-02(4), the Commission may give preference to an applicant that will maximize benefits that result from the adoption of the policies and practices listed in Table 3.4-1 and may require the adoption of such policies and practices as appropriate. The Commission may also give preference to an applicant that will maximize interstate benefits.

TABLE 3.4-1

Policy Criteria

North Dakota Administrative Code Section 69-06-08-02(4)	Description of Project Adoption	Section Addressed
4. POLICY CRITERIA		
a. Location and design.	The location of the Project, in both North Dakota and Montana, has been designed to bridge the interregional gap between the Western Interconnection and the SPP and MISO in the Eastern Interconnection. The Project includes interconnection points in both states, which improves reliability and efficiency for both Interconnections by increasing transfer capacity and access to additional generation between markets. Additionally, the location is based on landowner participation, field survey results, known environmentally sensitive areas, and the siting criteria in NDAC Section 69-06-08-02.	1.2, 1.3, 1.6, 1.7, 1.8, 3.0, Appendix A
b. Training and utilization of available labor in this state for the general and specialized skills required.	North Plains has utilized several local firms in developing the Project and compiling this Application and will continue to use local labor to the extent practicable.	6.1, 9.0
c. Economies of construction and operation.	The Project will achieve economies of construction and operation through strategic planning and efficiency measures. By optimizing construction processes and implementing cost-effective operational strategies, the Project aims to minimize expenses and enhance overall economic efficiency throughout its operation lifecycle.	5.0
d. Use of citizen coordinating committees.	North Plains initiated engagement with external stakeholders early in Project development. This includes engagement with federal, state, and county officials and staff, as well as landowners to address their questions and concerns regarding the Project. Given North Plains' extensive stakeholder engagement efforts, citizen coordinating committees were/are not necessary.	7.0
e. A commitment of a portion of the transmitted product for use in this state.	The Project will transport power without preference towards a particular generation technology. Electric utilities, cooperatives, government entities, corporate energy providers, or independent generators in the WECC, MISO, or SPP regional power systems may own capacity rights or an interest in North Plains, or both.	1.0
f. Labor relations.	No labor relations would be negatively affected by the Project.	6.1
g. The coordination of facilities.	Existing infrastructure was considered in the location of the Project Corridor, Project Route, and associated facilities. North Plains continues to coordinate with Basin Electric Power Cooperative for the SPP interconnection and Minnesota Power for the MISO interconnection.	1.2, 6.2
h. Monitoring of impacts.	North Plains will monitor construction activities and use Best Management Practices (BMPs) throughout Project construction. During Project operation and restoration, North Plains will monitor the Project and assess impacts as well as comply with all requirements set forth in the Certificate and Route Permit. North Plains will implement a Construction, Mitigation, and Reclamation Plan (CMRP) that outlines specific strategies to avoid, minimize, and mitigate environmental impacts during construction and reclamation.	Appendix G
i. Utilization of existing and proposed rights of way and corridors.	The Project has not been sited within existing rights-of-way; however, the Project has been designed to parallel roadways, section lines, field breaks, and transmission lines to the extent practicable. Additionally, the Project utilizes existing roads for access to the extent possible.	Appendix A
j. Other existing or proposed transmission facilities.	The Project has been designed to coordinate with existing transmission infrastructure to the extent practicable. The Oliver Transmission Line will parallel the Leland Olds-to-Fort Thompson 345-kV transmission line for approximately 7.5 miles in three different areas, the Morton Transmission Line will parallel the Antelope Valley-to-Broadland 345-kV transmission line for approximately 8 miles, and the HVDC Transmission Line will parallel the Rhame-to-Belfield 230-kV transmission line for approximately 2 miles. North Plains has coordinated and will continue to coordinate with existing transmission facilities, as needed.	Appendix A

3.5 DESIGN AND CONSTRUCTION LIMITATIONS

The Project Route is the most direct route that also minimizes impacts to the criteria identified in NDAC Section 69-06-08-02 and aligns with landowner and other stakeholder input. Constraints present within the vicinity of the Project include communities, developed areas, existing infrastructure, Little Missouri National Grassland (LMNG) and greater sage-grouse priority conservation areas (PCA). The Project Corridor and Route were selected to avoid and minimize impacts to these areas, as well as to other sensitive resources identified during field surveys. Site control was also critical to the Project. North Plains secured voluntary option agreements for easements or other land rights agreements with landowners for the right-of-way.

3.6 ECONOMIC CONSIDERATIONS

There are many economic considerations in the design and routing of a transmission line. In general, minimizing the length of the route and minimizing the number of angle structures decreases the cost of the transmission line by minimizing the material, construction, and right-of-way costs. The selection of materials and structure types also affects the cost of a transmission line. The Project Corridor and Route effectively balance the economic considerations of the overall length of the line and the required number of angle structures with the potential impacts on landowners, the environment, and existing land use.

4.0 DESCRIPTION OF THE PROPOSED FACILITY

4.1 PROJECT ENGINEERING AND DESIGN

This section provides an overview of the design considerations and specifications of the transmission line structures and associated facilities.

4.1.1 Design Characteristics

North Plains designed the Project to adequately transmit power between the Western and Eastern Interconnections. The structures were designed to withstand a variety of weather and loading conditions to not only be structurally adequate, but also to maintain necessary clearances between conductors and the ground, other electric facilities, and aerial features such as buildings or structures.

Table 4.1.1-1 summarizes information on the Project voltage, capacity, circuit configuration, and preliminary structure details such as height, span, materials, and clearance requirements. Appendix H-1 provides the typical figures for the structures planned to be installed on each transmission line segment. Physical, geologic, environmental, and landowner constraints may require adjustments in structure location and span length that may impact the height of any given structure along the proposed Route, as well as the total number of each type of structure. However, the preliminary design characteristics are provided in Table 4.1.1-1.

Table 4.1.1-1

Preliminary Design Characteristics – Transmission Line Segments [a]

Design Characteristic	HVDC Transmission Line	Oliver Transmission Line	Morton Transmission Line
Nominal voltage	525-kV	345-kV	345-kV
Capacity (approximate)	3,000 megawatts	1,500 megawatts	1,500 megawatts

Table 4.1.1-1

Preliminary Design Characteristics – Transmission Line Segments [a]

Design Characteristic	HVDC Transmission Line	Oliver Transmission Line	Morton Transmission Line
Minimum ground clearance	31 feet at 110 degrees Celsius (230 degrees Fahrenheit)	25 feet at 110 degrees Celsius (230 degrees Fahrenheit)	25 feet at 110 degrees Celsius (230 degrees Fahrenheit)
Structure approximate number and type	771 tubular steel monopole with two-pole or lattice steel structures in difficult terrain	276 tubular steel monopole two-pole or lattice steel structures in difficult terrain	112 tubular steel monopole two-pole or lattice steel structures in difficult terrain
Structure height range	100-195 feet	120-195 feet	120-195 feet
Structure typical height range	130-165 feet	140-190 feet	140-190 feet
Structure average span length	1,200 feet	1,200 feet	1,200 feet
Segment length	168 miles	52 miles	22 miles
Conductor	3-2156 Bluebird	2-1590 Falcon	2-1590 Falcon
Conductor configuration	Three subconductors per pole, and two dedicated metallic return (DMR) conductors	Double circuit with six phases per structure and three subconductors per phase	Double circuit with six phases per structure and three subconductors per phase

[a] Design specifications, including number of each type of structure, are based on preliminary design and are subject to change.

4.1.2 Transmission Structures

North Plains evaluated tubular steel monopole structures, steel lattice, and two-pole structures for use on the Project. For most areas, North Plains anticipates that tubular steel structures will be used. However, North Plains may use steel lattice or two-pole structures in particular situations, such as locations requiring longer spans, where the alignment changes direction by a substantial degree, or locations with difficult access for construction. Typical figures of potential structure types are included in Appendix H-1. Surface finish on structures will typically be self-weathered steel, although other finishes may also be used in specific areas to minimize visual intrusion.

Three main structure types are proposed for use on the transmission lines: tangent structures, angle structures, and dead-end structures. Tangent structures will be used in straight-line segments, or with small transmission line angles typically less than two degrees. Tangent structures are the most common type of structure and will make up most of the structures. Where there is a change of direction in the Project Route of more than two degrees, an angle structure will typically be used. Angle structures are like tangent structures, except the foundations may be deeper and wider to accommodate multidirectional, non-offsetting loads. Dead-end structures will be required at transmission line termination points, as well as for long spans or sharp angle turns. Dead-end structures may also be necessary due to specific constraints or terrain features. Dead-end structures support significantly larger loads than standard tangent and angle structures.

Table 4.1.2-1 provides the preliminary estimated number of structures by transmission line segment and county.

TABLE 4.1.2-1

Count of Pole Structures by Transmission Line Segment and by County [a]

	North Dakota						
Project Segment	Golden Valley	Slope	Hettinger	Grant	Morton	Oliver	Total
HVDC Transmission Line	59	256	232	189	35	0	771

TABLE 4.1.2-1

Count of Pole Structures by Transmission Line Segment and by County [a]

	North Dakota						
Project Segment	Golden Valley	Slope	Hettinger	Grant	Morton	Oliver	Total
Oliver Transmission Line	0	0	0	0	215	61	276
Morton Transmission Line	0	0	0	0	112	0	112
PROJECT TOTAL	**59**	**256**	**232**	**189**	**362**	**61**	**1,159**

[a] Design specifications are based on preliminary design and are subject to change.

North Plains is currently examining the costs, constructability, and potential impacts associated with various structure designs. North Plains will make the final decision on structure design based on consultation with agencies and affected landowners.

4.1.3 Foundations

North Plains will typically install each HVDC Transmission Line tubular steel monopole structure on drilled pier concrete foundations. Tangent monopole structures will have foundation dimensions 7 to 12 feet in diameter and 20 to 60 feet deep (see Appendix H-1). The dead-end structures for the HVDC Transmission Line will typically be single self-supporting steel monopoles with a foundation of 7 to 15 feet in diameter and depth between 20 to 60 feet. Two-pole structures may also be used at dead-end locations with each pole having a foundation of 7 to 15 feet in diameter.

For lattice structures for the HVDC Transmission Line the foundations will be installed for each of the four legs. The foundations for each leg will be approximately 3 to 6 feet in diameter and 25 to 55 feet deep. The approximate base of lattice towers at ground level will be between 30 by 30 feet and 55 by 55 feet in area (see Appendix H-1). Angle and dead-end structure foundations will be on the larger and deeper side of the range.

North Plains will typically install monopole structures on the Oliver and Morton Transmission Lines on drilled pier concrete foundations. Tangent monopole structures will have foundation dimensions 5 to 10 feet in diameter and 20 to 60 feet deep (see Appendix H-1). The dead-end structures for the Oliver and Morton Transmission Lines will typically be single self-supporting steel monopoles with a foundation of 6 to 15 feet in diameter and depth between 20 to 60 feet. Two-pole structures may also be used at dead-end locations with each pole having a foundation of 6 to 15 feet in diameter.

The lattice structures for the Oliver and Morton Transmission Lines will include foundations for each of the four legs. The dimensions of the foundations for each leg will be approximately 3 to 6 feet in diameter and 25 to 55 feet deep. The approximate base of lattice towers at ground level will be between 25 by 25 feet and 55 by 55 feet in area (see Appendix H-1).

Table 4.1.3-1 summarizes the anticipated foundation/installation specifications by structure type and transmission line segment based on preliminary design.

TABLE 4.1.3-1

Foundation and Installation Specifications by Structure Type and Transmission Line Segment [a]

Segment	Structure Type	Foundation / Installation Type	Approx. Diameter Range (feet)	Depth Range (feet)
HVDC Transmission Line	Tubular steel monopole (tangent and dead-end)	Drilled concrete pier	7-15	20-60
	Tubular steel two-pole (dead-end)	Drilled concrete pier	7-15 for each pole	20-60 for each pole
	Steel lattice (tangent and dead-end)	Drilled concrete pier (4 legs) with between 30 by 30 feet and 55 by 55 feet base	3-6 for each leg	25-55 for each leg
Oliver Transmission Line and Morton Transmission Line	Tubular steel monopole (tangent)	Drilled concrete pier	5-10	20-60
	Tubular steel monopole (dead-end)	Drilled concrete pier	6-15	20-60
	Tubular steel two-pole (dead-end)	Drilled concrete pier	6-15 for each pole	20-50 for each pole
	Steel lattice (tangent and dead-end)	Drilled concrete pier (4 legs) with between 25 by 25 feet and 55 by 55 feet base	3-6 for each leg	25-55 for each leg

[a] Design specifications are based on preliminary design and are subject to change.

4.1.4 Conductors

Conductors are wires used to transmit electricity. In an HVDC transmission line, these conductors are referred to as pole conductors. Bipole HVDC transmission lines contain two pole conductors: one positively charged and the other negatively charged relative to the earth. Conductors will generally consist of aluminum, which carries the electrical current, and steel, which provides structural strength. The HVDC Transmission Line will include both the main pole conductors and dedicated metallic return (DMR) conductors to provide redundancy and resiliency during a faulted condition or during imbalanced flows to and from the Eastern and Western Interconnections. If a fault occurs with one of the main pole conductors, electricity can continue to flow through the DMR conductors to provide power flow on one pole. The Oliver and Morton Transmission Lines will use two conductors in a three-phase configuration typical of AC systems. North Plains will suspend conductors from pole structures by insulators. Insulators provide the conductors with sufficient clearance from the structure to prevent flashover and thereby prevent a phase-to-ground outage.

Overhead electric transmission lines can experience faults, including faults from events such as lightning strikes. Therefore, overhead electric transmission lines are also equipped with overhead shield wires to protect against lightning strikes. Shield wires also minimize corona effects,[1] audible noise, and radio and television interference. North Plains is proposing to use OPGW for the shield wires, which combines the functions of shielding and communications. The conductive part of the OPGW will be grounded adjacent to each structure and will shield the conductors from lightning strikes. The optical fiber part of the OPGW will have fiber optic cables which will be used for high-speed communication and data transmission necessary for Project telecommunications but will not be utilized for commercial purposes.

[1] Corona is a small electric discharge produced by a localized electric field near energized components and conductors. Corona is associated with audible noise, radio interference, and television interference. Potential impacts associated with corona noise are assessed in Section 6.3.

OPGW communications will support North Plains' Supervisory Control and Data Acquisition (SCADA) system. The SCADA system is a computer system for gathering and analyzing real-time data, which is used to monitor and control the transmission line's performance. A SCADA system gathers information, such as the status of a transmission line, and transfers the information back to a central site, alerting the central site of the line's status. The SCADA system also performs necessary analysis and control, such as determining if outage of the line is critical and displaying the information in a logical and organized fashion. SCADA is critical to the operation of the transmission line; therefore, a second OPGW will be installed on the structures to provide redundancy.

North Plains completed a detailed conductor optimization study for the HVDC portion of Project and selected 525-kV conductors and DMR conductors for the HVDC Transmission Line. Additionally, North Plains completed a Power Line Systems – Computer Aided Design and Drafting (PLS-CADD) analysis and selected the twin-bundled 1590 thousand circular mils (kcmil) aluminum conductor steel reinforced (ACSR) Falcon Conductor for the Oliver and Morton Transmission Lines. Table 4.1-1 summarizes typical design characteristics, including conductor selections.

4.1.5 Converter Station Site

The Project will include a converter station at the point where the DC and AC transmission line segments connect in order to convert from DC to AC and vice versa (see Figure 1.0-1). The converter station will also be capable of stepping up voltages and housing protection and control systems. In addition to the equipment discussed in the following sections, the converter station will include lightning masts (for lightning protection) and bus work to facilitate electrical interconnections between different areas. The converter station design will use shielded and downward-facing lights focused on areas necessary for safety, security, and operations.

The Morton County Converter Station will connect the HVDC Transmission Line to both the Oliver Transmission Line and the Morton Transmission Line. The Morton County Converter Station will be located in the North 1905.50 feet of the Southwest Quarter of Section 2, Township 135 North, Range 84 West, Morton County, North Dakota.

Table 4.5-1 shows the permanent land requirements for the converter station. The converter station will require construction of a permanent access road to the facility off County Road 135 (see Section 4.3), and temporary workspace during construction for staging of equipment and material to build the facility (see Section 4.2.5). The preliminary site plan for the Morton County Converter Station is provided in Appendix H-2.

4.1.5.1 AC Switchyard

The AC switchyard will be configured to support six AC interconnections, four import/export transmission lines and two tie lines from the adjacent converter station. The switchyard will consist of circuit breakers, disconnect switches, and measurement equipment. The high voltage equipment will be interconnected with bus work. The control enclosure will be approximately 60 feet long by 15.5 feet wide by 10 feet tall and constructed of steel including steel siding and roof. The six AC gantries will facilitate the transition of the AC transmission lines to the switchyard and will be approximately 75 feet tall. The perimeter of the switchyard will be fenced, and a layer of crushed rock surfacing material will be installed in the interior of the switchyard and extend approximately 3 feet outside the perimeter fence. The AC switchyard will be similar in design and appearance to an AC substation.

4.1.5.2 AC Area

The AC area consists of various bus work, breakers, disconnect and ground switches, arresters, filtering equipment, measurement devices, conduits, trenches, panels, electrical cabinets, and other main circuit equipment that is commonly found in typical AC substations, with some additional devices specialized for HVDC applications. The AC area is divided into two parts, one associated with the DC positive pole, and the other for the DC negative pole.

The AC area includes two gantries which facilitate the transition of the AC transmission line to the station. This structure is approximately 80 feet tall.

4.1.5.3 Transformer Area

The transformer area contains converter transformers and associated bus work. These transformers are very similar to conventional AC power transformers but specialized for HVDC systems. They consist of main tanks, conservators, tap-changers, bushings, arresters, and cooling fans. There will be six in-service transformers and one spare unit.

The transformers are oil filled and each unit has a dedicated oil containment system. Firewalls will be located on either side of the units. The firewalls are designed to prevent the spread of fire in the unlikely event that a fire occurs. The firewalls are approximately 48 feet wide and 31 feet tall and extend only slightly beyond the main transformer tank as required by fire codes (approximately one foot taller and two feet wider); as a result, the firewalls are not much larger than the transformer body. They will be located in a straight line, uniformly with the transformer units. The spare transformer unit is the exception and will be located elsewhere in the immediate vicinity of the transformer area and will not require firewalls because it is not energized. The firewalls also help to abate the sound generated by the transformers and their cooling fans. In addition to installing firewalls, the converter transformers will be located beyond the 50-foot minimum setback required by applicable national electrical and fire codes for surrounding facilities (valve halls) and structures, further reducing fire propagation risk.

The AC bus work associated with the transformers will be the tallest equipment in the area, except for the lightning masts. The bus work is approximately 55 feet tall.

4.1.5.4 Valve Hall

The valve hall is a large, engineered enclosure that contains the solid-state power electronic devices responsible for the conversion of AC to DC, or vice versa. The valve hall also houses additional main circuit equipment, such as AC/DC wall bushings, capacitors, reactors, measurement devices, arresters, and the valve cooling circuits. The valve hall also includes HVAC, small power and lighting, fire alarms, and similar subsystems.

Two valve halls are required, one for the positive pole and the other for the negative pole. The valve halls may be physically separated or adjoined, depending on final engineering. Each valve hall will be designed as a stand-alone structure regardless of whether the two are physically adjoined. If the valve halls are adjoined, or if either adjoins another building, the structures shall be separated by a firewall in between. Each valve hall will feature little to no oil-filled equipment, with the majority of equipment considered dry-type with no combustible or flammable liquids. Fire and smoke detection systems are also incorporated into the converter station's control and protection (C&P) system to ensure alarms and shutdowns are executed should they be necessary.

Each valve hall is up to 140 feet long and 206 feet wide, with an overall height of up to 100 feet. The valve halls will be painted to blend the structures into the natural landscape and backgrounds.

4.1.5.5 Service Enclosure

The service enclosure, also referred to as a control enclosure, contains the C&P equipment responsible for operation of the converter station. It also includes communications equipment, cyber security devices, fiber optic cables, computer servers, and similar communications-based equipment. To support these systems, the enclosure includes auxiliary power distribution, batteries, uninterruptible power supply, and small power infrastructure. A portion of the valve cooling system, such as pumps, pump skids, and piping is also within the enclosure. Additional equipment may include medium voltage switchgear, cabling, cable trays, alarms, security, and related items.

Two service enclosures are required, one for each valve hall, and are located immediately adjacent to the associated valve hall, typically adjoining their walls. These enclosures are often located immediately across from each other along the interior facing walls of the valve halls. As a result, these enclosures are not easily visible from outside the converter station as they are blocked by the valve halls. The service enclosures utilize fire alarms and suppression systems in keeping with industry best practices for the various equipment areas within the enclosures.

Each service enclosure will have a single and a two-story section, with the lower single-story section at a height of up to 16 feet. The larger, two-story section will be up to 80 feet long by 51 feet wide and up to 37 feet tall at the top of the sloped roof.

4.1.5.6 Valve Cooling

The valve cooling group consists of pumps, pump skids, C&P systems, piping, and dry-type heat exchangers, and utilizes a glycol de-ionized water mix within a containment area. There are two valve cooling groups, one for each valve hall. They are typically placed towards the inside of the station to minimize sound propagation from the cooling fans. The valve cooling towers, consisting of steel assembly with piping and cooling fans, are typically up to 10 to 15 feet in height.

4.1.5.7 DC Area

The DC area consists of various bus work, disconnect and ground switches, arresters, filtering equipment, measurement devices, conduits, trenches, panels, electrical cabinets, and other devices that are commonly found in typical AC substations, but specialized for use in HVDC. The DC area is divided into two parts, one for the positive and negative poles each. A DC line entry will also be a part of this area that facilitates connection of the incoming DC transmission line with the converter station.

4.1.5.8 Storage Facility

The storage facility is a basic enclosed space used for storing materials that do not require conditioned, room temperature storage. One storage facility is required for the converter station and will be located inside the converter station's fence line. The approximate size of the storage building is up to 155 feet long by 51 feet wide, and up to 31 feet tall (at the top of the sloped roof). A portion of the enclosure may be open, with an overhead roof to serve as a covered area for equipment staging.

4.1.5.9 Operations Facility

The operations facility is a manned area where operators are located and tasked with the day-to-day operations of the Project. The facility contains C&P equipment, office related items, water and septic systems, and other components typically needed for an occupied facility. The size of the operations facility is contingent on final design, but the facility is anticipated to be a maximum of 25 feet tall (at the top of the sloped roof). A parking area will be located adjacent to the operations facility.

4.1.5.10 Generator

A single, backup diesel generator is utilized for emergency purposes. It serves as the third source of auxiliary power for the converter station and will primarily be used during emergency outage restoration scenarios where the converter station can "restart", or re-energize, the connected AC network. Anticipated sizing of the generator will be under 2,000 kilovolt-amperes.

4.1.5.11 Materials Storage Area

Once construction nears completion, a portion of the temporary laydown area will be converted into a permanent outdoor storage area for materials. The area will be fenced and will have restricted access. Storage materials will consist of components associated with the transmission lines (e.g., poles, wires, insulators, etc.).

4.1.6 Fiber Repeater Stations

North Plains will install an OPGW that will provide telecommunication connectivity for Project operations (see Section 4.1.4). The optical data signal will degrade with distance as it travels through the optical fiber due to attenuation of the optical fiber and distortion of the optical signal. Consequently, the Project requires fiber repeater stations along the HVDC Transmission Line to overcome signal loss.

During detailed engineering, North Plains will perform fiber loss calculations to determine the exact location of fiber repeater stations. The maximum distance between fiber repeater stations is estimated to be around 50 to 60 miles; therefore, the Project will include 2 or 3 fiber repeater stations on the HVDC Transmission Line in North Dakota. Figure 4.1.6-1 provides a photograph of a typical fiber repeater station for reference. North Plains will locate each fiber repeater station within the right-of-way or within an easement adjacent to the right-of-way. A typical fiber repeater station will occupy an area approximately 80 by 40 feet (0.07 acres), will be fenced, and includes a small unoccupied building (approximately 12 by 12 feet) containing regeneration equipment. Each fiber repeater station will include a permanent access road and power supply via an electric distribution line, likely a 25-kV line. Each fiber repeater station will house emergency backup generators with a liquified petroleum gas storage tank and a battery bank to provide power to the communication system if the main power supply goes down. North Plains does not plan on siting fiber repeater stations on federally managed lands. Table 4.5-1 shows the approximate permanent land requirements for the fiber repeater stations. Locations of fiber repeater stations will be determined during final design.

NORTH PLAINS CONNECTOR
A Grid United Project

For Environmental Review Purposes Only

Figure 4.1.6-1
Photo of a Typical Fiber Repeater Station
North Plains Connector Project

4.2 TEMPORARY CONSTRUCTION WORKSPACE

North Plains will not utilize the entire Project Corridor or right-of-way for the construction of the Project. Therefore, North Plains has designed specific temporary workspaces for transmission structure pads, wire pulling and tensioning, fiber/line splicing, guard structures, and laydown yards to support construction activities.

Table 4.5-1 describes land requirements associated with temporary workspace required along the transmission lines and Figure 4.2-1 shows the typical layout of various workspaces along the Project Route.

4.2.1 Structure Pads

The Project will require structure pads around each transmission structure to install the foundations and support the laydown, assembly, and erection of each structure. Within the right-of-way, each structure will typically require a construction workspace centered on the structure, measuring approximately 200 by 200 feet (0.92 acre), while structures exceeding 170 feet in height will require a larger workspace of 250 by 200 feet (1.15 acres). Project workspaces have been adjusted to avoid encroachment into sensitive resources, such as wetlands and waterbodies.

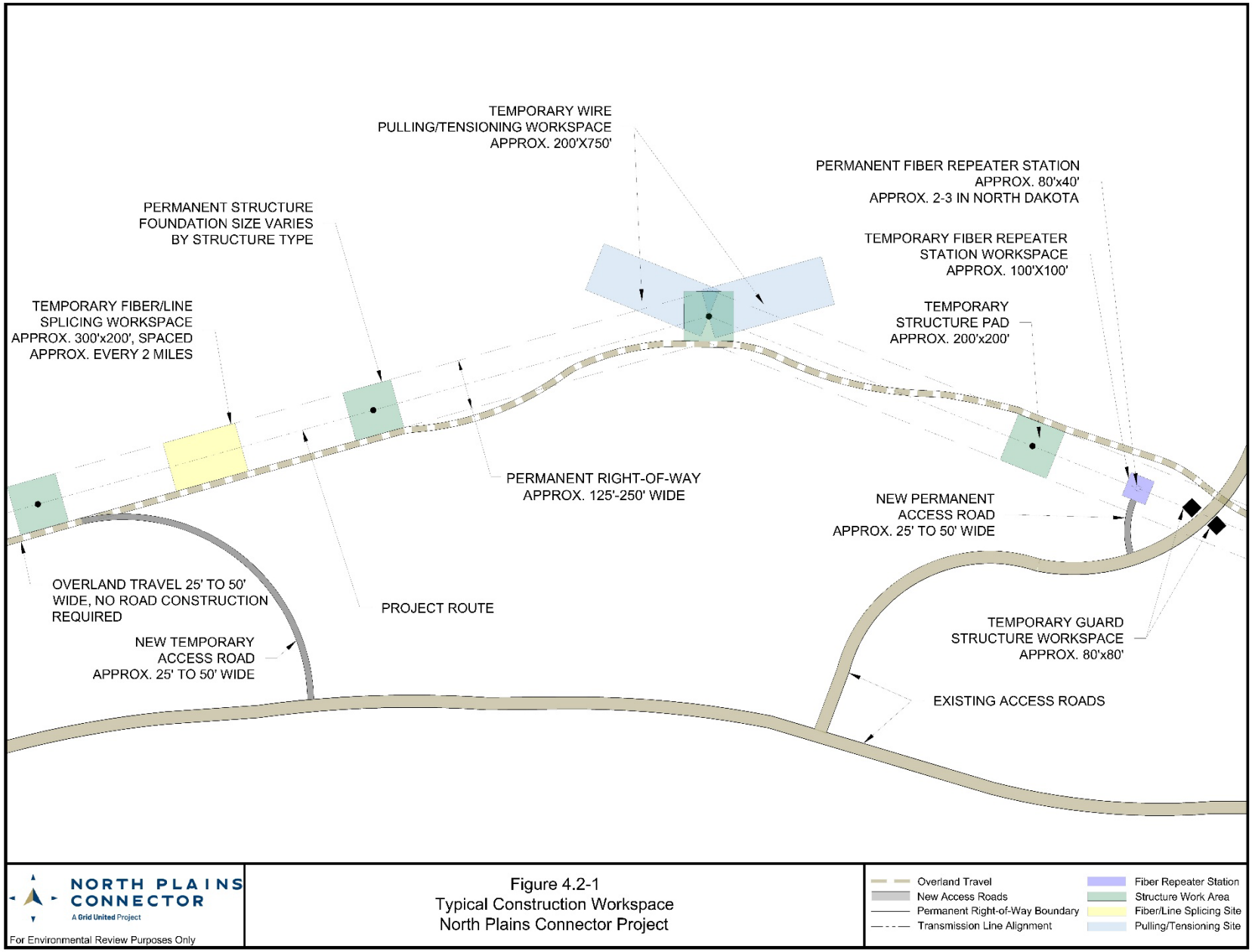
4.2.2 Wire Pulling and Tensioning

After the structures are set, North Plains will need to pull or string the conductor from structure to structure by either a helicopter or land-operated equipment. This typically occurs at identified points of intersections. Workspace extending from pole intersections to allow for wire pulling and tensioning of the lines will typically measure 200 by 500 feet (2.3 acres) at each site but may extend up to 200 by 750 feet (3.4 acres).

4.2.3 Fiber/Line Splicing

North Plains will transport conductor wire to the Project on large reels. North Plains will splice the conductor wire from separate reels together approximately every 9,000 feet. Splicing activities occur in temporary workspaces about 300 feet long by 200 feet wide (1.38 acres). North Plains will space these workspaces about 2 miles apart. The fiber/line splicing workspace locations will be determined as design is finalized.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]


TEMPORARY WIRE PULLING/TENSIONING WORKSPACE APPROX. 200'X750'
PERMANENT FIBER REPEATER STATION APPROX. 80'x40' APPROX. 2-3 IN NORTH DAKOTA
PERMANENT STRUCTURE FOUNDATION SIZE VARIES BY STRUCTURE TYPE
TEMPORARY FIBER REPEATER STATION WORKSPACE APPROX. 100'X100'
TEMPORARY FIBER/LINE SPLICING WORKSPACE APPROX. 300'x200', SPACED APPROX. EVERY 2 MILES
TEMPORARY STRUCTURE PAD APPROX. 200'x200'
PERMANENT RIGHT-OF-WAY APPROX. 125'-250' WIDE
NEW PERMANENT ACCESS ROAD APPROX. 25' TO 50' WIDE
OVERLAND TRAVEL 25' TO 50' WIDE, NO ROAD CONSTRUCTION REQUIRED
PROJECT ROUTE
TEMPORARY GUARD STRUCTURE WORKSPACE APPROX. 80'x80'
NEW TEMPORARY ACCESS ROAD APPROX. 25' TO 50' WIDE
EXISTING ACCESS ROADS
NORTH PLAINS CONNECTOR
A Grid United Project
For Environmental Review Purposes Only
Figure 4.2-1
Typical Construction Workspace
North Plains Connector Project
Overland Travel
New Access Roads
Permanent Right-of-Way Boundary
Transmission Line Alignment
Fiber Repeater Station
Structure Work Area
Fiber/Line Splicing Site
Pulling/Tensioning Site

4.2.4 Guard Structures

North Plains will erect temporary guard structures at road and railroad crossing locations where necessary to protect the public during stringing activities. Guard structures will typically consist of an insulated guard arm attached to a crane or digger derrick, or specialized guard trucks such as batwing or line-guard trucks, placed on either side of the road or railway to prevent ground wires, conductors, or equipment from falling onto and disrupting road traffic. Wood poles may be used in limited circumstances, and equipment for erecting guard structures will include augers, trailers with lifts, and pickup trucks. Guard structures may not be required for small roads, in which case North Plains will implement other safety measures such as barriers, flaggers, or additional traffic controls.

North Plains will notify all applicable agencies prior to stringing wire over any crossed facilities and will comply with all requirements of the agency having jurisdiction over the facility being crossed. It may be necessary for guard structures and associated access to be in the road right-of-way depending on topography and access restrictions imposed by the road authority (e.g., U.S. Department of Transportation, North Dakota Department of Transportation (NDDOT), or local county and township road departments). Exceptionally wide road crossings (greater than 200 to 300 feet), such as may occur at the interstate, will require installation of temporary guard structures in medians between opposite-traffic-flow lanes. The erection and dismantling of these temporary guard structures may require short-term traffic diversions.

Railroad crossing operations and procedures are controlled by the railroad company operating the affected rail line. Typically, stoppage of railroad traffic is not required during construction or conductor stringing and tensioning activities. Crossing activities are similar to those for road crossings and typically involve the use of guard structures, as discussed above. North Plains will perform stringing and tensioning activities in coordination with the appropriate railroad authorities. For safety and efficiency, stringing and tensioning activities will be performed during daylight periods and will be scheduled to coincide with times when railroad traffic is minimal. The railroad will typically provide a switchman to be present when work is being performed near or over railroad lines.

Guard structures will typically occupy a temporary area of approximately 80 by 80 feet (0.15 acre) per side of the road or railway.

4.2.5 Facilities

Table 4.5-1 shows the temporary workspace required for the storage of materials and equipment and to allow space to construct the facilities discussed in Section 4.1.6.

As discussed in Section 4.1.6.2, the location of each fiber repeater station along the HVDC Transmission Line has not been determined; however, North Plain estimates the Project will require 2 or 3 fiber repeater stations in North Dakota. Each station will require a temporary workspace area measuring approximately 100 by 100 feet (0.23 acre) for installation.

4.2.6 Contractor Laydown Yards

Contractor laydown yards will serve as field offices, reporting locations for workers, parking space for vehicles and equipment, and sites for material storage, fabrication assembly, portable concrete batch plants, and stations for equipment maintenance.

North Plains is currently finalizing details on the locations of contractor laydown yards. However, North Plains estimates requiring a 20-acre site approximately every 30 miles. Contractor laydown yards are typically located outside of the right-of-way. North Plains will locate contractor laydown yards in upland areas that have been previously disturbed such as existing yards, parking lots, or fields, and will avoid impacts to environmentally and culturally sensitive sites.

In areas where temporary workspace or construction access outside of the Project Corridor are required, North Plains will secure an agreement with the landowner (to the extent not covered by an existing agreement), conduct any required field surveys, and obtain any necessary permits prior to use.

4.3 ACCESS ROADS

Access roads are essential during construction to provide adequate entry to structure sites and facility locations. Project access will rely on a variety of road types, including existing roads, new temporary or permanent access roads, and overland travel in areas where no road is currently present and no road construction or grading is necessary to provide Project access. Access roads are typically up to 25 feet wide; however, widths may increase to allow for crane delivery, turns, and switchback areas and in areas of sloped terrain. North Plains will obtain the applicable permits or authorizations for temporary and permanent access roads located on federally managed lands. North Plains anticipates using the following access road types on the Project.

- Existing Access Road – No Improvement. This access road type includes paved or all-weather surfaced roads and well-traversed and established dirt or gravel roads that will not require improvements for use. No new disturbance will be created outside of the established roadbed and shoulders. This access road type could require regular maintenance to keep the road passable throughout construction.

- Existing Access Road – Improvement. This access road type includes existing roads that will require improvement prior to Project use. These improvements will be permanently left in place after construction is complete subject to landowner or road use authority approval.

- Overland Travel. This road type is the primary access between structure locations where there are no existing roads, and no road construction is necessary to move equipment. These impacts would typically be temporary in nature; however, waterbody crossings may be installed to allow for future safe overland travel during Project operation.

- New Temporary Access Road. This type includes constructing new temporary access roads required for the construction of the Project. Following construction, temporary access roads will be reclaimed and revegetated, although cut and fill contours and waterbody crossings may be retained to allow for future safe overland travel during Project operation.

- New Permanent Access Road. This type includes constructing new permanent access roads where roads do not exist, with the purpose of allowing access to the Project facilities.

- Turnarounds. Additional temporary space along some access roads allowing for vehicle turnarounds or bi-directional travel.

Waterbody crossings on existing and new permanent access roads will be retained as permanent improvements. Permanent waterbody crossings may also be necessary at select locations on new temporary and overland travel access roads to provide operational access to Project structures. State and federal authorizations will be acquired for both temporary and permanent waterbody crossings, as described in Section 6.9.2.

North Plains is designing access roads to the Project workspace to minimize traversing sensitive resources at site-specific locations, to avoid large waterway crossings, based on landowner preference communicated to North Plains for access across agricultural areas, and to provide the safest path to ascend steeply sloped areas. Table 4.3-1 presents the estimated lengths, in miles, associated with access roads for each transmission line segment. The final locations and types of access roads will be dependent upon the results of field surveys and final design.

TABLE 4.3-1

Access Road Lengths Along Transmission Line Segments

Segment or Facility / Impact Type / Access Road Type	North Dakota (miles)						Total Miles [a]
	Golden Valley	Slope	Hettinger	Grant	Morton	Oliver	
HVDC TRANSMISSION LINE							
Temporary							
Overland travel	6.4	35.2	41.4	25.5	2.3	0	110.8
New temporary access road	7.4	23.8	6.7	15.7	4.1	0	57.7
Permanent							
Existing access road – improvement	3.5	0.8	0.3	1.1	0	0	5.7
Existing access road – no improvement	0	3.5	0	0.5	0	0	4.0
OLIVER TRANSMISSION LINE/MORTON TRANSMISSION LINE							
Temporary							
Overland travel	0	0	0	0	2.4	0	2.4
New temporary access road	0	0	0	0	1.7	0	1.7
Permanent							
Existing access road – improvement	0	0	0	0	0	0	0
Existing access road – no improvement	0	0	0	0	1.5	0	1.5
OLIVER TRANSMISSION LINE							
Temporary							
Overland travel	0	0	0	0	19.7	1.5	21.2
New temporary access road	0	0	0	0	20.6	9.4	30
Permanent							
Existing access road – improvement	0	0	0	0	2.2	0.5	2.7
Existing access road – no improvement	0	0	0	0	0.2	0.1	0.3
MORTON TRANSMISSION LINE							
Temporary							
Overland travel	0	0	0	0	14.9	0	14.9
New temporary access road	0	0	0	0	5.1	0	5.1
Permanent							
Existing access road – improvement	0	0	0	0	5.7	0	5.7
Existing access road – no improvement	0	0	0	0	0.5	0	0.5

[a] The totals may not add up due to rounding.

The Project will require permanent access roads to access the fiber repeater stations associated with the HVDC Transmission Line in North Dakota described in Section 4.1.6; however, North Plains has not yet finalized design on these access roads. North Plains anticipates siting fiber repeater stations near existing roads to minimize the need for new roads.

4.4 INTERCONNECTION POINTS

Separate from the Project, Minnesota Power is constructing a new substation in Oliver County. The substation is being developed independently from North Plains as part of the Minnesota Power HVDC Modernization Project, which will modernize the existing Square Butte HVDC System between North Dakota and Minnesota that was built in the 1970s. The Minnesota Power HVDC Modernization Project Siting Application was approved by the Commission on June 4, 2025, in case number PU-24-381. Minnesota Power has signed a Facilities Construction Agreement with MISO (Minnesota Power, 2024). The East Oliver Substation will be located near Center, North Dakota. North Plains submitted two Merchant HVDC Transmission Connection Requests to MISO through their Attachment GGG process with a planned interconnection at the East Oliver substation. Request H110 was submitted on June 27, 2023, to study the project's export capability and request H113 was submitted on December 12, 2025, to study the project's import capability.

The Morton County Switchyard is the end point for the Morton Transmission Line and will serve as the eastern POI to SPP. North Plains submitted a Feasibility Study to the SPP Transmission Working Group (TWG), which accepted the results of the study in August 2023. The Planning Study Scope was approved in February 2024 and completed and endorsed by Transmission Working Group on May 27, 2025. The SPP Interconnection Agreement is currently under active negotiations with SPP and Basin Electric Power Cooperative. The Morton County Switchyard will be owned by Basin Electric Power Cooperative.

The Project interconnections at SPP, MISO, and WECC will adhere to an outage plan and schedule for interconnection to energized facilities. North Plains will coordinate with the incumbent utilities on a specific timeline to interconnect the existing facilities to the new facilities. The outage plan will determine the Commercial Operation Date of the Project near the end of the construction phase.

4.5 ESTIMATED PROJECT IMPACTS

Because North Plains has designed specific workspace for each Project component described in Section 4.0, there are instances where Project workspace components (e.g., temporary access road and structure pads) overlap. Therefore, the total acreage discussed in Sections 4.1 through 4.3 would overestimate the land requirements for the Project. Table 4.5-1 provides a summary of estimated temporary workspaces and permanent infrastructure footprints eliminating the overlap between designed Project components for a more accurate estimate of Project land requirements by transmission line segment and facility.

As described in the footnotes, this table also includes estimated land requirements associated with some of the Project components for which designs have not yet been finalized, including fiber/line splicing temporary workspace areas (see Section 4.2.3), temporary workspaces and permanent footprints associated with the fiber repeater stations on the HVDC Transmission Line (see Sections 4.2.5 and 4.1.6), access roads to fiber/line splicing workspaces or fiber repeater stations, and contractor yards (see Section 4.2.6).

TABLE 4.5-1

Summary of Land Requirements along Transmission Line Segments and Facilities

Segment or Facility / Workspace	Temporary (acres)	Permanent (acres)
HVDC TRANSMISSION LINE		
Structures [b]	709.4	3.1
Wire pulling and tensioning	516.0	0.0
Fiber/line splicing [c]	117.6	0.0
Guard structures	10.4	0.0
Access roads	529.8	29.9 [f]
Subtotal [a]	1,883.2	33.0
OLIVER TRANSMISSION LINE		
Structures	240.3	1.1
Wire pulling and tensioning	220.5	0.0
Fiber/line splicing [a]	36.2	0.0
Guard structures	7.8	0.0
Access roads	175.4	11.8 [f]
Subtotal [a]	680.2	12.9
MORTON TRANSMISSION LINE		
Structures	104.4	0.5
Wire pulling and tensioning	42.8	0.0
Fiber/line splicing [a]	15.6	0.0
Guard structures	2.6	0.0
Access roads	68.5	20.9 [f]
Subtotal [a]	233.9	21.4
MORTON COUNTY CONVERTER STATION	40.6	24.1
FIBER REPEATER STATIONS [d]	0.7	0.3
CONTRACTOR LAYDOWN YARDS [e]	160.0	0.0
PROJECT TOTAL [a]	**2,998.4**	**91.7**

[a] The totals may not add up due to rounding.

[b] The approximate permanent structure footprint area is calculated assuming all structures are monopole with a 15-foot maximum diameter. Please note that actual structure footprint may vary based on final structure selection and foundation design as discussed in Section 4.1.2.

[c] The locations of the fiber/line splicing areas have not been identified. North Plains estimates a temporary workspace area measuring approximately 300 by 200 feet (1.4 acres) will be required every 2 miles on each transmission line segment. This acreage estimate is calculated based on length of each transmission line segment by county and the approximated temporary workspace area.

[d] The locations of the fiber repeater stations along the HVDC Transmission Line are yet to be determined; however, North Plains estimates that one will be needed approximately every 50-60 miles and will occupy a permanent footprint area approximately 0.07 acres in size and a temporary workspace area approximately 0.23 acres in size will be required to install each station. Therefore, approximately 2 to 3 repeater stations will be along the HVDC Transmission Line in North Dakota.

[e] The locations of the contractor laydown yards are yet to be determined; however, North Plains estimates that one will be needed approximately every 30 miles and will occupy a temporary workspace area approximately 20 acres in size for a total of eight contractor laydown yards.

[f] Permanent impacts associated with access roads were calculated for anticipated upgrades to existing roads.

4.6 SETBACK REQUIREMENTS

The Project has been sited to comply with the siting requirements in NDAC Section 69-06-08-02(1)-(2) as well as local setback requirements. Table 4.6-1 includes the setback distances used in designing the Project.

TABLE 4.6-1

Summary of Setbacks Used to Design the Project

Agency/Setback Type	Setback Distance
NORTH DAKOTA PUBLIC SERVICE COMMISSION	
The geographic center of an ICBM launch or launch control facility.	1,200 feet [a]
Areas on either side of a direct line between ICBM launch or launch control facilities to avoid microwave interference.	30 feet [a]
Residence, school, or place of business.	500 feet [b]
COUNTY – TRANSMISSION LINE	
The center of the structure to the section line centerline in Golden Valley, Slope, Grant, Morton, and Oliver counties.	133 feet
The center of the structure to the section line and county road centerlines in Hettinger County. [c]	200 feet
The center of the structure to the county road centerline in Slope County.	150 feet [d]
The center of the structure to the state, county, and township road centerlines in Grant County.	150 feet
COUNTY – CONVERTER STATION	
Minimum building/structure setback – front yard	50 feet
Minimum building/structure setback – side yard	15 feet
Minimum building/structure setback – rear yard	25 feet
Minimum building/structure setback from centerline of roadway (rural connector)	110 feet

[a] The nearest ICBM launch or launch control facility is approximately 36 miles from the Project Route.
[b] As set forth in NDCC 49-22-05.1(2), a residence setback may be waived in writing by the owner of the residence.
[c] The Hettinger County setback was also applied in Havelock Township in Hettinger County.
[d] Per the Slope County zoning ordinance, transmission lines are to be setback from county and township roads a reasonable distance as determined by the Board of County Commissioners.

The Project has been sited along existing roads and existing infrastructure to the extent possible to minimize impacts to farming and ranching operations and natural resources. By request of the residence owner, the Project right-of-way is located within 500 feet of one residence. North Plains has obtained a waiver from the owner of the residence in accordance with NDCC Section 49- 22-05.1(3) (see Appendix F). The residence is a hunting cabin used seasonally by the owner.

5.0 CONSTRUCTION, OPERATION, AND MAINTENANCE

5.1 CONSTRUCTION

Construction of an overhead transmission line requires several sequential activities in a coordinated manner within the Project workspace. Figure 5.1-1 and the following discussion describe the major construction activities and approximate sequence:

- mobilization and preparation of contractor yards;
- surveying and staking;
- development of access roads and overland travel;
- vegetation clearing;
- install erosion and sediment control best management practices (BMPs);
- foundation installation;
- structure setting;
- installation of ground rods or counterpoise;
- installation of conductors and OPGW;
- wire stringing and clipping; and

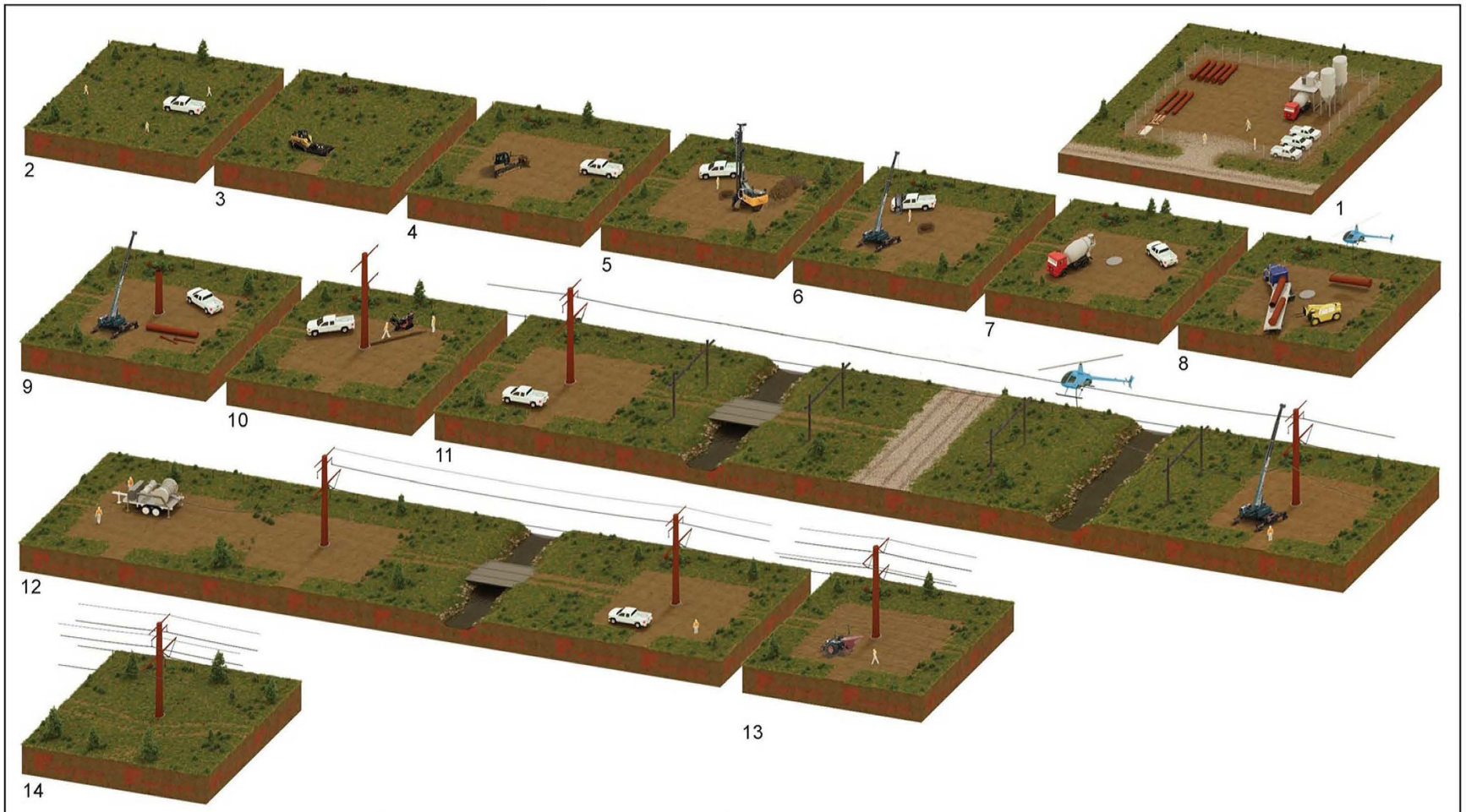
- site cleanup and reclamation.

The Construction, Mitigation, and Reclamation Plan (CMRP) provided in Appendix G discusses each of these construction activities in detail, in addition to identifying the BMPs and mitigation measures that will be implemented to avoid or minimize the potential impacts of Project activities on resources.

North Plains will select qualified construction contractors to construct the Project. Currently, North Plains plans for its construction contractors to conduct the activities identified above generally in sequential order. Several of these activities may occur concurrently during the construction process, with several construction crews operating simultaneously at different locations and each crew passing through any given area at least once. Different crews will work at different paces, but typically, assembly and erection of structures is the slowest activity. Crews can assemble and erect structures at an average pace of about 1 to 2 miles per day. Progress can be slowed if subsurface conditions are difficult and require a long-term drilling or blasting program or redesign of foundations. Wire installation can be completed at an average pace of about 1 mile per day. Each stringing section can take up to a week to complete, including installing the conductors, DMR, and/or OPGW.

Prior to construction, North Plains will acquire relevant easements and right-of-way grants and conduct pre-construction engineering, geotechnical testing, and environmental surveys. North Plains will also obtain all necessary federal, state, and local permits in advance of conducting the construction activity requiring the permit.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]



NORTH PLAINS CONNECTOR
A Grid United Project

Graphic is not to scale and for environmental review purposes only.

Figure 5.1-1
Typical Construction Sequence
North Plains Connector Project

1. Material yard and/or concrete batch plant
2. Survey and staking
3. Workspace clearing and access road construction
4. Grading and/or site preparation
5. Foundation hole drilling
6. Foundation cage installation
7. Concrete foundation poured
8. Material delivery to site
9. Tower structure assembly
10. Grounding system and guy wire installation
11. Conductor and optical ground wire stringing
12. Tensioning
13. Site cleanup and restoration
14. Operation and maintenance

5.1.1 Right-of-Way Preparation

North Plains will confine all construction equipment and vehicles to the Project workspace described in Section 4.2 and access roads described in Section 4.3. North Plains will flag or stake the boundaries of the Project workspace in a manner that visually identifies the boundaries of the Project workspace and keep construction activities within the authorized Project workspace. In addition, North Plains will install signs, flagging, or construction fencing for the following environmental features along the Project workspace and access roads, so these features can be easily identified by Project personnel and avoided as described in applicable permit applications:

- wetland boundaries and waterbody access crossing locations;
- drainages/drain tiles as identified by counties and landowners; and
- buffer zones for environmentally sensitive features, including archaeological and historic sites, rare plants or ecological communities, and other sensitive wildlife species and/or habitats per agency consultations. Signs will not disclose the specific location and/or species or feature type where laws require resource protection.

North Plains will contact the state One Call system to locate, identify, and flag existing underground utilities to prevent accidental damage during construction.

5.1.2 Construction Activities

5.1.2.1 Access Roads Construction

North Plains will use existing roads, develop new temporary and permanent access roads, and use overland travel to access the Project. Maintenance activities may include tree trimming and back-blading where needed on the existing road grade and as agreed upon with the road authority. North Plains may add dirt or gravel fill to maintain or improve existing roads or to develop permanent access roads, if needed.

The Project will use overland travel in some locations to allow for the safe passage of construction vehicles and equipment to the Project workspace. For overland travel, construction of a temporary access road with corresponding grading is unnecessary.

North Plains will construct temporary access roads for use during construction. Temporary access road construction may include clearing of vegetation, rock, and debris; cutting-and-filling and grading; establishing drainage features; laying aggregate; and performing other improvements to provide an adequate surface to support construction vehicles.

Fill materials that may be used to construct and maintain access roads during construction of the Project may include aggregate materials such as gravel, sand, and clay. Fill materials will not contain unsuitable material (e.g. trash, debris, asphalt). Topsoil will not be used as fill.

North Plains will perform restoration of temporary access roads and overland travel as described in Section 6 of the CMRP (see Appendix G). North Plains will remove all temporary infrastructure in wetlands or waterbodies such as bridges, construction mats, and other fill material as required by applicable permits and authorizations; permanent waterbody crossings will remain in place for the Project during operations and will be maintained according to applicable permits.

North Plains will maintain permanent waterbody crossings and permanent access roads to facilities to enable maintenance of the transmission line segments throughout Project operation. New permanent access roads may consist of dirt, gravel, or another hard surface. North Plains will obtain the applicable permits or authorizations for temporary and permanent access roads located on federally managed lands.

5.1.2.2 Vegetation Clearing

To facilitate construction equipment access and provide for safe clearances between vegetation and the transmission line during operations, North Plains will clear trees and tall vegetation from the right-of-way. North Plains will also clear vegetation, as needed, from the Project workspace, including new and improved access roads. North Plains will typically perform clearing with mechanical equipment such as mechanized mowers, sky trips, process harvesters, feller bunchers, or brush cutters. In areas where clearing with large equipment is not feasible, North Plains may clear with hand tools such as chain saws.

Unless otherwise agreed upon between North Plains and the applicable landowner or land-managing agency, North Plains will dispose of nonmerchantable timber and slash by mowing, cutting, chipping, mulching, and leaving in upland areas; hauling off-site to an approved location; or using in stabilizing erodible slopes or construction entrances. In non-agricultural, non-wetland areas, North Plains may uniformly broadcast chips, mulch, or mechanically cut woody debris across the Project workspace in a manner that avoids inhibiting revegetation. North Plains may also incorporate this material into the topsoil layer during grading activities, with landowner approval. North Plains will not dispose of chips, mulch, or mechanically cut woody debris in waterbodies or wetlands, including agricultural wetlands.

During construction, North Plains will cut vegetation within the right-of-way and Project workspace at or slightly above the ground surface. To minimize soil impacts and erosion potential, North Plains will not typically grub stumps or roots; however, North Plains may need to remove stumps in some locations within the Project workspace to facilitate the movement of construction equipment and where excavation will occur.

Section 5.4 of the CMRP provides additional details regarding vegetation clearing activities (see Appendix G).

5.1.2.3 Erosion and Sediment Control Best Management Practices

Ground disturbance activities are not anticipated to impact the entire Project Corridor or right-of-way. North Plains will limit ground disturbance activities to the areas around pole structures, along access roads, and within temporary construction workspaces where needed, where clearing of trees and tall vegetation is needed, and at the new facilities. North Plains will prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Storm Water Construction General Permit administered by the North Dakota Department of Environmental Quality (NDDEQ). As required by the Stormwater Construction General Permit, the SWPPP will describe the timing for installation of all erosion prevention and sediment control BMPs; include the location and type of temporary and permanent erosion and sediment control BMPs; along with the procedures used to establish additional temporary BMPs as necessary for the site conditions during construction. The SWPPP will identify all surface waters and existing wetlands that will receive stormwater from the construction site, during or after construction, and will identify state and impaired waters, as designated by the agencies. The SWPPP will also include a description

of permanent stormwater treatment systems required at the permanent facilities or permanent access roads.

Sections 5.7 and 6.3 of the CMRP provide additional details on temporary and permanent erosion and sediment control BMPs (see Appendix G).

5.1.2.4 Grading, Excavation and Foundation Installation

Prior to foundation installation, North Plains will establish a structure pad around the structure location to ensure a level and safe working area. In areas with uneven terrain, North Plains may need to grade the area around the foundation. North Plains will typically not perform grading in wetland areas. Where grading is required, North Plains will strip the topsoil layer and potentially into the subsoil layer and will separate the topsoil and subsoil into storage piles within the Project workspace. North Plains will leave gaps between the spoil piles and will install erosion and sediment control BMPs where stockpiled topsoil and subsoil piles intersect with water conveyances (i.e., ditches, swales) to maintain natural drainage. North Plains will maintain separation in the form of a gap or a physical barrier, such as a thick layer of mulch or silt fence between the topsoil and subsoil piles to prevent mixing.

The Project will require excavation for the drilled concrete pier foundations associated with the pole structures and foundations associated with the permanent facilities, as described in Section 4.1.3.

To construct a cast-in-place foundation, North Plains will first make a vertical hole using power drilling equipment, such as truck- or track-mounted augers. In rocky areas, North Plains may excavate the foundation holes by blasting or by installing special rock anchor or micro-pile type foundations. North Plains will cover augured structure holes if construction crews are unable to fill the hole in the same day. North Plains will not place excess spoils from augured structure holes in wetlands, waterbodies, drainages that lead to waterbodies, or other environmentally sensitive areas. North Plains will either reincorporate excess rocks and gravel in the immediate vicinity of the excavation on the right-of-way or remove excess rock and gravel for disposal as requested by the landowner.

Once the hole is excavated, North Plains will install reinforced-steel anchor bolt cages in the hole. These cages are designed to increase the structural integrity of the concrete. Typically, North Plains will assemble the cages at the nearest staging area and deliver the cages to the structure site via flatbed truck. North Plains will insert these cages in the holes prior to pouring concrete. Next, North Plains will fill the excavated holes containing the reinforcing anchor bolt cages with concrete. North Plains will follow the BMPs described in Section 5.8.5 of the CMRP regarding concrete work and Section 5.8.6 regarding construction dewatering (see Appendix G).

If North Plains encounters hard rock during grading or excavation for structure foundations, North Plains may need to perform blasting using explosives to loosen or fracture the rock to reach the required depth. Further discussion on blasting is provided in a Blasting Plan, included as Attachment C of the CMRP (see Appendix G).

5.1.2.5 Assembly and Erection of Structures

North Plains will transport monopole and two-pole structures to each structure work area in sections by truck or helicopter, depending on topography and access. At the structure site, North Plains will place each structure section on wood blocking. First, North Plains will use a large

crane to hoist the bottom structure section onto the structure foundation and mount the anchor bolts. Next, North Plains will lift the middle section(s) into place using guide brackets to align the section. North Plains will then ensure proper alignment and secure the fitting. Finally, North Plains will guide and secure the top section into place to complete the structure.

Lattice tower assembly is similar to monopole or two-pole structure assembly. North Plains will transport bundles of steel members and associated hardware and wood to each structure site by truck. Next, North Plains will lay out wood blocking, open the structure steel bundles, and place the structure steel bundles on the wood blocking for assembly. Typically, North Plains will assemble the leg extensions for the structures first using a small crane. Similar to monopole assembly, North Plains will then assemble subsections and hoist the subsections into place with a large crane. North Plains will fasten the subsections together to form a complete structure. A follow-up crew then tightens the bolts in the joints.

North Plains may use helicopters to erect structures. The use of helicopters for structure erection is typically limited to areas that are difficult to access, either due to a lack of roads, rough terrain, or both. North Plains will consider several site- and region-specific factors when deciding whether to use helicopters, including access to structure locations, presence of sensitive resources, permitting restrictions, landowner needs and preferences, construction schedule, weight of structural components, time of year, elevation, availability of heavy lift helicopters, weather, and construction economics.

North Plains will transport the structure sections and associated hardware, including insulators, hardware, blocking, stringing sheaves to the helicopter fly yard by truck, where North Plains will assemble sections of each structure and stage the sections for transport to the right-of-way. Once staged for transport, North Plains will attach structure sections by cables from the helicopter to the top of the structure section and will airlift the structure section to the structure location. Upon arrival, North Plains will place the section directly onto the foundation or stack on top of the previously erected structure section.

North Plains will plan and communicate the assembly and erection activities to landowners and land-managing agencies in advance of structure construction activities to provide a safe work area. North Plains will implement good housekeeping practices to contain and remove construction related waste and debris during these activities in accordance with the CMRP (see Appendix G).

5.1.2.6 Installation of Conductors and Wire Pulling and Tensioning

North Plains will erect temporary guard structures at road and railroad crossing locations to protect the public during stringing activities, as described in Section 4.2.4. The erection and dismantling of these temporary guard structures may require short-term traffic diversions. Traffic impacts resulting from wire-stringing may include short-term traffic diversions, traffic congestion, and brief road closures. Additional discussion on traffic management is provided in the Traffic and Transportation Management Plan, included as Attachment K of the CMRP (see Appendix G).

North Plains will deliver insulators, hardware, and stringing sheaves to each structure site. North Plains will rig the structures with insulator strings and stringing sheaves at each conductor, DMR conductor, and OPGW position. For safety and efficiency reasons, North Plains will typically perform wire stringing and tensioning activities during daylight hours, and typically schedule these activities at roadway crossings to coincide with periods of minimal road traffic to minimize traffic disruptions.

North Plains will pull or string pilot lines from structure to structure by either a helicopter or land-operated equipment, then thread the pilot line through the stringing sheaves at each structure. North Plains will use a helicopter to pull the pilot lines at roadway crossings to minimize or avoid impacts to road traffic.

Following pilot lines, North Plains will attach a stronger, larger-diameter line to conductors to pull them onto structures. North Plains will repeat this process until the conductor and OPGW are pulled through the sheaves. Stringing will use powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. The tensioner, in concert with the puller, will maintain tension on the wires while they are fastened to the structures. Once each type of wire has been pulled in, North Plains will adjust the tension and sag, remove the stringing sheaves, and permanently attach the conductors to the insulators.

At tangent structures, North Plains will attach conductors to insulators using clamps, andat dead-end structures, North Plains will cut the conductors and attach the conductors to the insulator assemblies by “dead-ending” the conductors either with a compression fitting or an implosive-type fitting. Before proceeding with the implosive-type fitting, North Plains will follow notification procedures identified in the Blasting Plan.

North Plains will plan and communicate the installation of conductors and wire pulling and tensioning activities to landowners and land-managing agencies in advance to provide a safe work area, avoid disruptions to adjacent activities, and to avoid environmental impacts. North Plains will implement good housekeeping practices to contain and remove construction related waste and debris during these activities.

Following stringing and tensioning, North Plains will remove guard structures and reclaim the area as described in Section 6 of the CMRP (see Appendix G).

5.1.2.7 Converter Station Construction

North Plains will implement safety precautions during converter station construction to protect human health. North Plains will set up barriers between energized facilities and the active workspace, restrict untrained personnel from entering the Project site, and meet equipment clearance requirements.

North Plains will begin construction of the Morton County Converter Station by surveying and staking the site as described in Section 5.1.1. North Plains will conduct soil borings at the approximate location of large structures and equipment and obtain soil resistivity measurements to confirm site characteristics. Next, North Plains will perform site preparation work, including vegetation clearing and soil grading, to establish a clear and flat working surface. North Plains will also construct permanent and temporary access roads.

North Plains will compact the area for the structure foundation to the densities required for foundations to support buildings and structures. North Plains will use three types of foundations, as described below.

- Spread footings are placed by excavating the foundation area; placing forms, reinforced steel, and anchor bolts; and pouring concrete into the forms. After the foundation has been poured, the forms are removed, and the surface of the foundation is finished.

- Drilled pier foundations are placed in a hole made by a track- or truck-mounted auger. Reinforced-steel and anchor bolts are placed into the hole using a track- or truck-mounted crane. The portion of the foundation above ground is formed. The portion below ground uses the undisturbed earth of the augured hole or a prefabricated cylinder as the form. After the concrete foundation has been poured, the form is removed, the excavation is backfilled, and the surface of the foundation is finished.

- Slab-on-grade construction is like spread footing construction; except, spread footing is a circular, square, or rectangular slab that is provided to support an individual column. Many spread footings may be needed to support a single large structure or building. A slab-on-grade foundation is a concrete slab that is poured at ground level and is used as the foundation of the entire building. Slab-on-grade foundations are typically used for smaller structures and prefabricated buildings.

Concurrent with or following foundation installation, North Plains will install oil containment structures, as required, to prevent oil from transformers, reactors, circuit breakers, and other oil-containing equipment from seeping into the ground in the event of a rupture or leak. Then, North Plains will install underground electrical raceways and copper ground grid, followed by steel structure and area lighting. North Plains will then erect the converter valve hall and ancillary buildings along with various high-voltage apparatus, typical for a converter station. The installation of high-voltage transformers will require special, high-capacity cranes and specially trained crews for the unloading, setting into place, and final assembly of the transformers. North Plains will place a crushed rock surface on the ground to create a stable, all-weather working surface with high resistivity, which increases allowable step and touch voltages and reduces the risk of shocks to humans in the unlikely event of a conductor touching the ground.

Fill materials that may be used to construct and maintain the converter station may include aggregate materials such as gravel, sand, and clay. North Plains may use materials obtained on-site from grading or excavation activities for reincorporation as road base along access roads. Where suitable materials are not available on-site or approved for use, North Plains will purchase these materials locally, where possible. Fill materials will not contain unsuitable material (e.g. trash, debris, asphalt). Topsoil will not be used as fill.

North Plains will install a security fence around the portion of the site that will enclose the converter station. North Plains will install locked gates at appropriate locations along the security fence for authorized access.

After North Plains has installed the equipment, North Plains will test the converter station systems. North Plains will then complete electrical energization of the facility. North Plains will time the energization of the facility to take place with the completion of construction of the transmission line and other Project facilities. After construction is completed, North Plains will remove and dispose of debris and unused materials from the site and will restore disturbed areas within the temporary workspace as described in Sections 5.12 and 6 of the CMRP (see Appendix G).

5.1.3 Construction Management

North Plains will select qualified engineering, procurement, and construction (EPC) contractors to manage construction activities. The EPC contractors will use the services of local contractors where possible and appropriate and will undertake the following activities:

- securing building, electrical, grading, road, and utility permits;
- performing detailed civil, structural, and electrical engineering;
- scheduling execution of construction activities;
- forecasting Project labor requirements and budgeting;
- coordinating and managing the work of all Project subcontractors; and
- providing direct supervision for the installation of all Project components including foundations, transmission structures, insulators and conductors, and interconnection equipment.

Construction activities under the supervision of the EPC contractors will consist of the following general tasks:

- access road construction;
- vegetation clearing;
- foundation excavation;
- concrete foundation installation;
- electrical and communications equipment installation;
- transmission line assembly and structure erection;
- construction of facilities;
- system testing; and
- restoration of temporary impact areas.

Throughout the construction phase, ongoing coordination will occur between North Plains and the EPC contractors. North Plains, the EPC construction managers, and the operations and maintenance (O&M) staff manager will work together to create a smooth transition from construction through the Project commissioning and operation.

5.1.4 Construction Environmental Training and Monitoring

North Plains will develop an environmental training program tailored to this Project. Training will review environmental commitments identified in permit applications and additional environmental conditions required in permits issued by federal, state, or local agencies. North Plains will require all individuals to complete applicable training prior to beginning work on the Project. North Plains will maintain training records.

North Plains will employ environmental inspectors on the Project as further described in Section 7 of the CMRP (see Appendix G). The environmental inspectors will review the Project activities daily for compliance with federal, state, and local regulatory requirements. Environmental

inspectors will have the authority to stop work as approved by the lead environmental inspector. Environmental inspectors will work with North Plains to implement corrective action if construction activities are not in compliance with environmental commitments, landowner requirements, or applicable permit requirements.

5.1.5 Restoration

After construction activities have been completed, North Plains will initiate final cleanup activities, as described in Section 5.12 of the CMRP (see Appendix G). For areas where grading and/or excavation has occurred, North Plains will conduct rough and final grading to restore the area to as near as practicable to pre-construction conditions.

North Plains will then prepare the seedbed, install or repair erosion and sediment control BMPs, and conduct restoration in accordance with Section 6 of the CMRP (see Appendix G).

North Plains will remove construction mats and temporary bridges and culverts once construction crews complete restoration activities and no longer require access to the construction workspace (see Appendix G).

North Plains will compensate landowners for damages in accordance with individual landowner agreements.

5.2 OPERATION AND MAINTENANCE

North Plains will conduct routine and preventative maintenance activities to identify and repair any deficiencies recorded during routine monitoring and inspections. Although North Plains will allow the right-of-way to revegetate with herbaceous and low growing brushy vegetation after construction, North Plains will periodically trim larger shrubs and trees from the right-of-way where they pose a risk of damage or interference with the transmission lines. Section 8 of the CMRP further describes routine inspections and vegetation management during operations (see Appendix G).

6.0 ENVIRONMENTAL ANALYSIS

This section provides a comprehensive review of environmental and socioeconomic conditions within the Study Area, Project Corridor, or the general region, depending on the resource. Major resources reviewed include socioeconomics and demographics, public services, health and safety, cultural and tribal resources, land use and recreation, geological resources, vegetation resources, wildlife resources, and special status resources. Each section features a description of the existing resource, and a description of the measures taken to avoid and/or minimize potential effects on the resource.

6.1 SOCIOECONOMICS AND DEMOGRAPHICS

6.1.1 Description of Resources

6.1.1.1 Demographics

Due to the rural nature and low population density of the general region, the population demographics are evaluated by the North Dakota counties crossed by the Project Corridor. These

counties include Golden Valley, Slope, Hettinger, Grant, Morton, and Oliver. Table 6.1.1-1 details the estimated population of the counties from the years 2010 to 2020.

TABLE 6.1.1-1

Population Statistics for the Counties Crossed by the Project Corridor

State/County	Total Population 2010	Total Population 2020	Percent Change (2010 to 2020)	Population Density in 2020 (persons per square mile)
NORTH DAKOTA	**672,591**	**779,094**	**13.7**	**11.3**
Golden Valley	1,680	1,736	3.2	1.7
Slope	727	706	(3.0)	0.6
Hettinger	2,477	2,489	0.5	2.2
Grant	2,394	2,301	(4.0)	1.4
Morton	27,471	33,291	17.5	17.3
Oliver	1,846	1,877	1.7	2.6

Source: U.S. Census Bureau. 2023. QuickFacts. Available online at: https://www.census.gov/quickfacts/. Accessed March 2025.

Based on the 2020 census, Morton County has the largest population and had the most significant population increase from 2010 to 2020 compared to the other counties. Golden Valley, Oliver, and Hettinger counties also had slight population increases, while Grant and Slope counties experienced declines.

6.1.1.2 Socioeconomics

Due to rural/agricultural characteristics of the counties, the industries that align with such characteristics reflect the general economic activity. The counties' greatest employment sectors are educational services and health care and social assistance and agriculture, forestry, fishing and hunting, and mining. Table 6.1.1-2 breaks down the employment sector that constitutes these countries' economies.

TABLE 6.1.1-2

Percent of Employed Civilian Labor Force, by Industrial Sector

State/ County	Agriculture, forestry, fishing and hunting, and mining	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing, and utilities	Information	Finance and insurance, and real estate rental and leasing	Professional, scientific, and management, and administrative and waste management services	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Other services, except public administration	Public administration
NORTH DAKOTA	**8.2**	**7.2**	**7.3**	**3.0**	**11.0**	**5.6**	**1.3**	**5.8**	**7.2**	**26.2**	**7.8**	**4.6**	**4.8**
Golden Valley	24.4	5.8	5.7	4.9	7.1	2.3	1.6	4.3	2.5	25.3	4.9	6.7	4.5
Slope	51.0	5.0	3.5	0.8	6.0	4.5	0.8	0.5	6.5	15.3	3.3	1.5	1.5
Hettinger	25.4	10.3	4.3	3.1	7.6	4.8	0.4	5.1	4.5	19.6	4.0	7.0	3.9

TABLE 6.1.1-2

Percent of Employed Civilian Labor Force, by Industrial Sector

State/ County	Agriculture, forestry, fishing and hunting, and mining	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing, and utilities	Information	Finance and insurance, and real estate rental and leasing	Professional, scientific, and management, and administrative and waste management services	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Other services, except public administration	Public administration
Grant	24.2	5.9	1.6	2.0	9.9	6.8	1.1	5.0	6.2	25.1	2.9	3.5	5.9
Morton	5.1	8.0	5.8	1.6	13.2	6.5	1.3	6.0	6.8	24.2	9.7	4.7	7.0
Oliver	16.5	8.0	6.2	1.8	5.6	12.7	1.7	4.5	5.7	21.9	3.5	5.7	6.2

Source: U.S. Census Bureau. 2023b. Selected Economic Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2023. Available online at: https://data.census.gov/table/ACSDP5Y2022.DP03?q=dp03. Accessed March 2025.

Table 6.1.1-3 showcases the per capita income, median household income, and percent-below-poverty of the counties crossed by the Project Corridor.

Table 6.1.1-3

Per Capita Income, Median Household Income, and Percent Below the Poverty Level

State/County	Per Capita Income [a]	Median Household Income [a]	Unemployment Percentage [a]	Percent Below Poverty Threshold [b]
NORTH DAKOTA	**$75,949**	**$42,474**	**3.9**	**11.2**
Golden Valley	$76,528	$36,292	4.6	15.4
Slope	$62,500	$44,034	5.4	8.8
Hettinger	$70,827	$43,990	6.1	11.6
Grant	$56,750	$36,921	3.7	18.7
Morton	$79,483	$45,337	1.4	6.5
Oliver	$76,953	$41,155	0.9	7.3

Source: U.S. Census Bureau. 2023b. Selected Economic Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2023. Available online at: https://data.census.gov/table/ACSDP5Y2022.DP03?q=dp03. Accessed March 2025.
U.S. Census Bureau. 2023c. Poverty Status in the Past 12 Months by Household Type by Age of Householder. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B17017, 2023. Available online at: https://data.census.gov/table/ACSDT5Y2022.B17017?q=b17017. Accessed March 2025.

Within the counties crossed by the Project Corridor, Golden Valley and Morton Counties are the only counties that have a higher median household income than the State of North Dakota; the remaining counties have a lower median household income than the State of North Dakota. Slope, Hettinger, and Morton Counties have higher per capita income than the State of North Dakota. Hettinger and Grant Counties have higher population in poverty or poverty conditions than the State of North Dakota.

6.1.2 Avoidance and/or Minimization

6.1.2.1 Demographics

North Plains estimates a peak construction workforce of approximately 400 workers in North Dakota. This includes an estimated 150 workers at the Morton County Converter Station and the remaining workers composing various construction crews along the transmission lines in North Dakota. Workforce distribution will be dependent on the construction phase of each segment of the line. Construction of the Project is expected to take approximately 3 to 4 years.

Currently, North Plains plans to conduct construction activities (i.e., right-of-way preparation, development of access roads and overland travel, etc.) described in detail in Section 5.0, generally in sequential order. Several of these activities may occur concurrently during the construction process, with several construction crews operating simultaneously at different locations and with each crew passing through any given area at least once. Different crews will work at different paces, but typically, assembly and erection of structures is the slowest activity. Crews can assemble and erect structures at an average pace of about 1 to 2 miles per day. Progress can be slowed if subsurface conditions are difficult and require a long-term drilling or blasting program or redesign of foundations.

North Plains will look for opportunities to hire local workers, but utilization of a local workforce will depend on availability of skilled labor. There will be a temporary influx of workers from outside the area to construct the Project resulting in a temporary increase in local and regional population for the duration of construction.

During construction, the Project may temporarily impact local housing as workers could rent or purchase homes in the area, potentially increasing demand for available housing. During operations, long-term impacts may include limited additional housing demand due to permanent full-time employees relocating to the area and purchasing homes. However, no displacement of existing residences is anticipated during either phase.

North Plains anticipates two to four full-time equivalent jobs for the operation of the Project facilities. North Plains will contract or direct hire line crews to maintain the transmission lines. The line crew will be sourced from the local lineman labor pool as available. Thus, the overall impacts of Project operation to economy, employment, and income will be positive.

6.1.2.2 Socioeconomics

Money spent on Project construction will generate jobs in two ways: direct employment by vendors and suppliers to the Project who will employ people to design, supply, and build the Project, and indirect and induced economic activity related to the purchase of supplies, meals, entertainment, and rent for accommodations.

North Plains estimates a peak construction workforce of approximately 400 workers in North Dakota, spread throughout the Project Corridor. Construction of the Project is expected to take approximately 3 to 4 years. Workers will support local economies by purchasing goods and services, thereby generating indirect and induced economic benefits. The duration of employment contracts will vary depending on the nature of the work.

Construction of the Project will require substantial spending on various elements critical to the Project's development, including construction materials, labor, site acquisition, site preparation,

engineering, civil work, legal services, and specialized electrical work. These investments contribute directly to the Project and also stimulate local economic activity by creating jobs and supporting businesses that supply goods and services for the Project. Table 6.1.2.2-1 shows the total estimated economic outputs in North Dakota associated with the Project. The reported dollars are based on a Project in-service date of fourth quarter 2032.

Table 6.1.2.2-1

Project Economic Outputs in North Dakota

Project Phase	Economic Output	Worker Earnings
Construction of the Project	$1,870,000,000	$275,200,000
Operation of the Project [a]	$42,200,000	$5,700,000

[a] Based on the first 30 years of the Project

Communities and businesses within and near the Study Area will experience an increased demand for labor and materials during Project construction. Construction of the Project is anticipated to result in the local purchase and lease of available construction equipment and machinery including cranes, lifts, pump trucks, flatbed trucks, dump trucks, excavators, and front-end loaders. Additionally, locally procured services are anticipated to include limited design and engineering services, waste disposal, sanitary services, food services, material sourcing (such as gravel), and security. Local distributors are also anticipated to supply fuel to operate the Project's equipment, earthmoving equipment, trucks, and diesel generators.

North Plains is also actively engaging local communities and labor through the following measures:

- Through its partnerships with the North Dakota Community Foundation, North Plains launched the Community Investment Program. Since its inception in 2023, North Plains has granted approximately $2 million of its $3.85 million commitment. The Community Investment Program has awarded grants to over 100 organizations in counties crossed by the Project. Award decisions are made by a community advisory committee from each county, composed of residents and local leaders.

- North Plains has engaged with Bismarck State College and United Tribes Technical College in North Dakota to develop workforce development partnerships. This commitment is anticipated to add to the local labor pool.

- Working with Tribally owned businesses and community members, North Plains has developed and implemented an inclusive tribal engagement approach to employ Tribal/Traditional Cultural Specialists (TCS) on the Project. In addition, North Plains is exploring opportunities to collaborate with Tribal colleges to develop certificate programs and job opportunities for students in the areas of environmental and tribal surveys and monitoring.

Overall, Project construction will generate employment and economic benefits in the Study Area.

6.2 PUBLIC SERVICES

6.2.1 Description of Resources

6.2.1.1 Roads, Traffic, and Railroads

A network of interstate highways, state highways, county roads, township roads, local roads, private roads, section line rights-of-way, and railroads traverse the Study Area. The Project crosses state highways and interstates, including Interstate 94, Highway 49, Highway 8, Highway 22, Highway 67, and Highway 85.

Table 6.2.1.1-1 presents the Existing Average Annual Daily Traffic (AADT) volumes at state highways and interstate roadways near Project crossings. Each AADT value is based on the nearest official traffic count location. This information supports understanding of traffic conditions in the vicinity of the Project.

Table 6.2.1.1-1

Existing AADT Volumes at Interstate and State Highway Crossings

Roadway	Nearest AADT Count Location (AADT ID)	Year	AADT (vehicles/day)	Direction
Interstate 94	East of Crown Butte Lake (ID: 059-00543)	2025	10,149	2-way
Highway 49	North of 58th St SW (ID: 037-00003)	2022	437	2-way
Highway 8	South of 66th St SW (ID: 041-00026)	2024	619	2-way
Highway 22	South of 62nd St SW (ID: 041-00007)	2024	1,141	2-way
Highway 67	South of Highway 21 (ID: 087-00017)	2024	161	2-way
Highway 85	South of 64th St SW (ID: 087-00035)	2024	1,397	2-way

Source: NDDOT. 2025. Traffic Data Management System Traffic Viewer. Available online at: https://nddot.public.ms2soft.com/tdms.ui_core/trafficviewer. Accessed June 2025.

The Project will cross the Enchanted Highway (102nd Avenue SW) in Hettinger County, North Dakota at approximately milepost 266 on the HVDC Transmission Line. The Enchanted Highway is a 32-mile stretch of road that runs north from Regent to the Gladstone exit on Interstate 94. Along the highway, visitors can view some of the world's largest scrap metal sculptures, which are accessible from gravel parking areas located adjacent to the road. The Enchanted Highway is administered by the Enchanted Highway Foundation.

The closest sculpture to the Project Route is the Pheasants on the Prairie sculpture, which is approximately 500 feet north of the centerline of the HVDC Transmission Line as it crosses the Enchanted Highway. The Pheasants on the Prairie sculpture is located on the northeast corner of the intersection of the Enchanted Highway and 61st Street SW. Pheasants on the Prairie consists of a 70-foot-long and 40-foot-tall rooster, a 60-foot-long and 35-foot-tall hen, and 20-foot-long and 15-foot-tall chicks, all constructed of pipe and wire mesh (Enchanted Highway, 2025).

The Oliver Transmission Line will cross the Old Red Old Ten Scenic Byway in Morton County, North Dakota, just west of Mandan. The state scenic byway begins at the Mandan Depot on Main Street and runs west to Dickinson. The Old Red Old Ten Scenic Byway is overseen by the Old Red Old Ten Scenic Byway Committee (Byway Committee). The mission of the Byway Committee is for recreational, historical, and economic revitalization in the communities it passes through along Old Highway 10. The goal was to bring travelers off the interstate to visit local towns and inject dollars into the economy (Old Red Old Ten Scenic Byway, 2025).

6.2.1.2 Aviation Facilities

North Plains conducted a review of aviation facilities within and beyond the Study Area, using Federal Aviation Administration (FAA) database (FAA, 2025) along with landowner input, aerial reviews, and other online sources. The following aviation facilities were searched:

- Private airstrips within 10,000 feet (approximately 1.89 miles) of the Project Route.
- Airports registered with the FAA with at least one runway more than 3,200 feet in length that are located within 20,000 feet (approximately 3.79 miles) of the Project Route, and if present, whether any transmission structures will exceed a 100:1 horizontal slope (one foot in height for each 100 feet in distance) from the closest point of the closest runway.
- Airports registered with the FAA having no runway more than 3,200 feet in length that are located within 10,000 feet of the Project Route, and if present, whether any transmission structures will exceed a 50:1 horizontal slope from the closest point of the closest runway.
- Heliports registered with the FAA located within 5,000 feet (approximately 0.95 miles) of the Project Route, and if present, whether any transmission structures will exceed a 25:1 horizontal slope from the closest point of the closest landing and takeoff area of the heliport.

North Plains did not identify any airports registered with the FAA within 20,000 feet of the Project Route or heliports located within 5,000 feet of the Project Route; therefore, the associated transmission structure and runway slope analyses were not needed.

North Plains did, however, identify two private airstrips within 10,000 feet of the Project Route. Information on the identified airstrips is presented in Table 6.2.1.2-1. A private airstrip is a non-commercial airfield typically used for personal or private aircraft operations. Unlike public airstrips, private airstrips are not required to be registered with the FAA unless they meet certain criteria. As a result, private airstrips are generally not listed in FAA databases and may not be readily accessible through online resources. Crop-duster planes used for aerial application of pesticides or fertilizer operated by local operators may be present within the Study Area.

TABLE 6.2.1.2-1

Private Airstrips within 10,000 Feet of the Project Route

County	Type of Airstrip	Facility Name	Operation Status	Latitude	Longitude	Approximate Distance and Direction from Project Route
Morton	Private airstrip	Z P Fld	Operational	46.8508	-101.0754	7,030 feet (1.3 miles) west
Hettinger	Private airstrip	Unknown	Operational	46.4952	-102.7362	5,270 (1.0 mile) south

Aerial review of the private airstrips indicates they are cleared, grassy fields with no paved runways. The private airstrip in Morton County has a single runway and a building presumably for airstrip use. The private airstrip in Hettinger County appears to have two intersecting runways and a building near the intersection, presumably for airstrip use.

The FAA requires structures exceeding 200 feet above ground level to be filed for an obstruction evaluation; however, the Project's structures are below this threshold and are not subject to FAA

filing requirements. North Plains notified the FAA and North Dakota Aeronautics Commission of the Project and solicited feedback. To date, no aerospace agency has responded to the notification. Additional details regarding the project notification letters are provided in Section 7.0.

6.2.1.3 Communication Systems

Corona discharge from transmission lines can generate radio interference by producing electromagnetic radiation in the form of radio waves. The amount of interference depends on the signal strength and noise levels. Radio interference is typically only noticeable near the transmission line and diminishes rapidly with distance.

Within the Study Area, there are no paging transmission towers, Broadband Radio Service or Educational Broadband Service transmitters, cellular towers, land mobile broadcast towers, microwave service towers, or land mobile commercial towers, as recorded by the Federal Communications Commission (Federal Communications Commission [FCC], 2025). Land mobile private transmission towers are located within the Study Area. These towers are typically used by private entities (such as utilities, transportation services, or businesses) for two-way radio communications. No communication towers licensed by the FCC are located within 500 feet of the Project Route.

6.2.1.4 Rural and Regional Water Systems

Within the Study Area, there are two water systems: the Missouri West Water System, a rural water system serving small communities and households in western North Dakota, and the Southwest Water Supply Project, a regional system that provides water to a larger area in southwestern North Dakota, including both urban and rural communities (North Dakota Department of Water Resources [NDDWR], 2025).

6.2.1.5 Electrical Services

Electrical services in the Project Area are provided by a combination of rural electric distribution cooperatives, including Slope Electric Cooperative, Mor-Gran-Sou Electric Cooperative, Roughrider Electric Cooperative, and Goldenwest Electric Cooperative. Electrical infrastructure in the area includes a mix of transmission and distribution lines that support regional power delivery and local electrical service. Distribution lines are a mix of both underground and aboveground construction and provide electricity to nearby farmsteads, residences, and commercial properties.

6.2.2 Avoidance and/or Minimization

6.2.2.1 Roads, Traffic, and Railroads

The Project has been sited along existing roads and existing infrastructure to the extent possible to minimize impacts to farming and ranching operations and natural resources. The existing roadways offer access opportunities for the transmission line. North Plains will coordinate with the counties and NDDOT to obtain the necessary road use agreements and approach permits. North Plains has identified both existing and proposed new roads for Project access, as detailed in Section 4.3.

Construction of the Project may result in short-term effects on traffic in the Study Area. Construction activities associated with road crossings, right-of-way access points, and additional

traffic generated by commuting construction workers will potentially affect local traffic flow and volume. Commuting construction workers will generate a temporary increased traffic volume on state, county, and local roads in the Study Area. The largest number of workers commuting to a single area will be for the construction of the Morton County Converter Station, with a peak workforce of 150 at the site, which has the potential to significantly increase the number of vehicles using local roads.

Construction activities will occur at multiple construction areas along the Project workspace. This variation, combined with the rural location of the Project Route, will limit the effects on local commuters.

Any procedure or operation that requires crossing railroads will be coordinated with, and controlled by, the company operating the affected railroad line. The use and installation of guard structures at road and railway crossings is addressed in Section 4.2.4.

Where wire pulling and tensioning areas crossroads, temporary traffic impacts may result from wire-stringing, which include short-term traffic diversions, traffic congestion, and brief road closures. Commuter traffic and railroad interruptions will be temporary and managed in accordance with the Traffic and Transportation Management Plan, included as Attachment K of the CMRP (see Appendix G). No long-term effects on traffic volume, traffic flow, or rail transport are expected to occur during operation of the Project.

The Project will be visible from the Pheasants on the Prairie sculpture viewing and parking area along the Enchanted Highway. Temporary impacts to the Enchanted Highway will occur during construction. During operations, indirect, but permanent, visual impacts are anticipated. No direct impact on the art installations on the Enchanted Highway will occur. North Plains has coordinated with the Enchanted Highway Foundation regarding the Project. The Enchanted Highway Foundation has not expressed concerns regarding the Project.

The Project will be visible from the Old Red Old Ten Scenic Byway. Temporary visual impacts to the scenic byways will occur during construction. During operations, indirect, but permanent, visual impacts are anticipated. Where the Project crosses the Old Red Old Ten Scenic Byway, the Project parallels the existing Leland Olds-to-Fort Thompson 345-kV transmission line, thereby reducing additional visual disruption to the byway. The Byway Committee noted during a meeting with North Plains that the Project would not impact the Old Red Old Ten Scenic Byway. Further details regarding North Plains' coordination with the Byway Committee are discussed in Section 7.2.19.

6.2.2.2 Aviation Facilities

The Project is expected to have no impact on the private airstrip within 10,000 feet of the Project Route in Morton County due to the distance from the Project. The private airstrip in Hettinger County is owned by a participating landowner who has approved the Project Route in that area. No other airstrip, airport, or heliport resources are within the areas evaluated; therefore, no mitigation is needed. The Project will comply with all FAA regulations and requirements for notification.

Line markers will be used to make the transmission line more visible to aircraft where required by the FAA. The FAA requires colored marker balls in specific situations, such as near airports, airstrips, landing pads, or where small aircraft or helicopters fly low in mountain passes or near freeways. North Plains does not anticipate that structure lighting will be required because

structures will be less than 200 feet tall. North Plains will install line markers and lighting as dictated by FAA regulations. Line markers may also be installed at pipeline crossings to help identify the overhead transmission line and prevent accidental contact by pipeline maintenance equipment that may occasionally need to operate in the area.

6.2.2.3 Communication Systems

While licensed transmission equipment often relies on line-of-sight communication paths, the distance between these facilities and the transmission line reduces the potential for electromagnetic or physical interference. Any interference concerns that may arise following construction of the Project will be monitored and addressed by North Plains in coordination with affected parties. The Project is not expected to interfere with FCC-licensed communication services; therefore, no mitigation is anticipated.

The Project will be designed to operate within industry standard limits with respect to radio and television interference. With sufficient corona activity, some radio and television interference may be noticeable; however, the sound generated by a transmission line is very low in power and is generally only experienced in very close proximity to the line, typically directly underneath the conductors. Potential interference depends on the relative location of the transmission line, the signal transmitter, and the receiver. Interference is more likely when the line is located between the signal source and the receiver. However, this type of impact has become less common due to improvements in digital signal processing, the widespread use of cable and satellite services, and the federally mandated transition to digital television in 2009. Any impacts to individual reception of AM/FM radio or television signals post-construction of the Project will be monitored and addressed by North Plains in collaboration with affected parties.

North Plains will comply with North Dakota One Call requirements. Existing telephone and fiber optic cables will be located in the field by the respective utility companies prior to construction to ensure that impacts to telephone and fiber optic cables will be avoided. The Project is not expected to impact telephone or fiber optic services during construction or operation; therefore, no mitigation is anticipated.

6.2.2.4 Rural and Regional Water Systems

North Plains will require water for dust control and batching of concrete for the transmission line structure foundations. North Plains estimates that approximately 2.4 million gallons of water will be needed for concrete batching and approximately 272,000 gallons of water per mile for access road dust control based on the anticipated construction duration. North Plains intends to primarily acquire water from municipal sources for these purposes. Project water needs that cannot be acquired from municipal water sources will be supplied by water rights holders by water agreement. North Plains will make agreements with existing water rights holders; therefore, the Project will not have a net impact on water use.

The O&M facility at the Morton County Converter Station is expected to connect to the Missouri West Water System. Use of water for Project operations will be negligible.

North Plains will contact the North Dakota One Call system to locate, identify, and flag existing water pipelines to prevent accidental damage during construction. Structures have been sited to avoid placement over water pipelines. Abandonment of water wells is not anticipated; however, in the event any wells are abandoned, they will be sealed in accordance with North Dakota law.

Construction and operation of the Project will not significantly impact the water supply; therefore, no mitigation is needed.

6.2.2.5 Electrical Services

Electrical services for the Morton County Converter Station and fiber repeaters stations will involve coordination with multiple electrical service providers, including Slope Electric Cooperative, Mor-Gran-Sou Electric Cooperative, Roughrider Electric Cooperative, and Goldenwest Electric Cooperative, depending on the final overall system design. These services will include station service power, which is used to operate lighting, controls, protection systems, and other auxiliary equipment at the fiber repeater stations and converter station. Station service power is anticipated to be supplied from the nearest existing distribution line which may be overhead or underground which services nearby farmsteads and residential properties.

The contractor responsible for constructing the converter station and fiber repeater stations will utilize North Dakota One Call prior to ground disturbance to identify and avoid existing utilities. North Plain Connector anticipates that electrical services for routine operations will be provided by the local electrical service provider. Construction and operation of the Project will not significantly impact electrical services; therefore, no mitigation is needed. The Project will help meet regional demand for electricity, and as a result the Project is anticipated to have a positive effect on the electrical services in the region.

6.3 Health and Safety

6.3.1 Description of Resources

6.3.1.1 Residences, Schools, and Businesses

North Plains conducted a desktop review and field survey review of occupied residences, potentially occupied residences, schools, businesses, and other structures intended for habitation within the Study Area. With one exception, North Plains sited the Project right-of-way at least 500 feet from occupied residences, schools, and places of business. Per the owner's request, the Project right-of-way is located within 500 feet of one residence. The owner of the residence is participating in the Project and has executed a waiver (see Appendix F). The residence is a hunting cabin used seasonally by the owner. Figure A-6 in Appendix A shows the location of residences, schools, and places of business within the Study Area.

6.3.1.2 Cities

Table 6.3.1.2-1 shows the incorporated cities/towns of North Dakota that are within a 10-mile radius of the Project Route. New England, Mandan, and Amidon are the three closest cities/towns to the Project Route.

TABLE 6.3.1.2-1

Cities Within 10 Miles of Project Route

s/Town	Project Distance to City	Project Direction from City
Amidon	3.5 miles	East, South, and West
Bismarck	8.6 miles	West
Carson	6.6 miles	North
Center	6.0miles	Southeast
Elgin	7.4 miles	North

TABLE 6.3.1.2-1

Cities Within 10 Miles of Project Route

Flasher	4.3 miles	North and northwest
Mandan	3.3 miles	West
Mott	9.4 miles	North
New England	2.3 miles	South
New Leipzig	9.2 miles	North
Regent	5.7 miles	North
Solen	5.2 miles	North

6.3.1.3 Military Operations

North Plains notified several military operations agencies/organizations of the Project and solicited feedback. These agencies include the Grand Forks Air Force Base, Minot Air Force Base, 91st Missile Maintenance Squadron, U.S. Department of Defense (also known as Department of War [DOW]), and the Military Aviation and Installation Assurance Siting Clearinghouse. To date, no military operations agencies/organizations have responded to the notification. Additional details regarding the project notification letters are provided in Section 7.0.

North Plains also conducted a review of military installations within the Study Area, using the Readiness and Environmental Protection Integration Program map (DOW, 2025). Based on the program map, no military installations or ranges are present within the Study Area. The Project is located approximately 36 miles south of the nearest Intercontinental Ballistic Missile (ICBM) launch or launch control facility.

6.3.1.4 Sound

There are no noise regulations for the State of North Dakota, Golden Valley County, Oliver County, or Morton County applicable to construction or operation of the Project. Slope County Zoning Resolution states that sustained noise of over 80 decibels (dB) during the day and 70 dB at night is prohibited (Slope County, 2011). Grant County Zoning Ordinance Section 4.14 states that sustained noise of over 80 dB during the day and 70 dB at night is not allowed (Grant County, 2025). Hettinger County Land Use Regulations Section 6.8 states that sustained noise of over 75 dB during the day and 65 dB at night is not allowed (Hettinger County, 2025).

Existing sound levels near the Project are estimated using the existing land use classifications and reference documents for typical sound levels. The Project crosses land in areas that are generally rural. According to American National Standards Institute (ANSI) Standard 12.9/Part 3, revised November 1993, in rural areas the typical daytime sound level is 40 A-weighted decibel (dBA) or less and the typical nighttime level is 34 dBA or less (sound levels provided as equivalent continuous sound level [L_{eq}]) (ANSI, 1993). Rural is defined as less than 200 people per square mile.

Generally, sound levels during the operation and maintenance of transmission lines are minimal. During operations, the most common source of audible sound from transmission lines is due to corona and is heard as a crackling or hissing sound. AC transmission lines typically generate maximum audible sound in foul weather during storms or rain events due to additional corona generated as a function of conductor surface anomalies and water droplets. Additionally, aeolian vibration can be a source of sound when a steady flow of wind interacts with an object such as a transmission line.

In HVDC transmission lines, the presence of surface irregularities such as scratches, nicks, and contamination of the conductors can increase the local surface gradients and the levels of audible sound. The static electric field causes the worst-case audible sound to occur in the summer months during fair-weather conditions.

6.3.1.5 Electromagnetic Fields

Electric and magnetic fields (EMF), also known as electromagnetic fields, are generated by the flow of electricity through transmission lines. EMF refers to two separate fields: electric fields and magnetic fields. Electric fields arise from the voltage or electrical charges, and magnetic fields arise from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring, and electrical appliances. HVDC and AC transmission lines produce different types of EMF that vary in frequency. In AC transmission lines, the polarity of the voltage and current change direction at 60 hertz (Hz), producing EMFs that change direction. In HVDC transmission lines, the EMF is made up of two components: a static electric and magnetic field, which is due to electric charge on the conductors and is constant at 0 Hz and a variable component that is due to charged ions in the air surrounding the HVDC transmission line pole conductors. The HVDC Transmission Line will produce static and space charge EMFs. The Oliver Transmission Line and Morton Transmission Line will produce EMFs that change direction.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the International Committee for Electromagnetic Safety (ICES) have determined that scientific evidence does not establish a causal relationship between AC EMF and long-term health effects, including cancer or other diseases (ICES, 2019, ICNIRP, 2010). Neither ICES nor ICNIRP have recommended limits for HVDC electric fields. Overall research has not shown to date that exposure to low-level static EMF has detrimental effects on health (ICNIRP, 2025). There are no federal standards or standards from the State of North Dakota limiting occupational or residential exposure to EMFs within the right-of-way or at the edges of transmission line right-of-way.

North Plains evaluated the EMF strength associated with different conductor bundling configurations for the HVDC Transmission Line during normal operating conditions of the HVDC system. The 3-conductor configuration will produce a magnetic field which is similar in magnitude to the Earth's naturally occurring magnetic field.[2]

Additionally, North Plains evaluated EMF strength for the Oliver Transmission Line and Morton Transmission Line.

6.3.1.6 Hazardous Materials/Hazardous Waste

Multiple federal and state sources were reviewed to identify known contaminated sites, underground storage tanks, and environmental incidents within the Study Area. Databases reviewed included:

- U.S. Environmental Protection Agency (EPA) systems: Superfund Enterprise Management System, Toxics Release Inventory, Resource Conservation and Recovery Act (RCRA) Information, Assessment, Cleanup, and Redevelopment

[2] The range for the earth's naturally occurring magnetic field is 300 milligauss to 700 milligauss.

Exchange System, Toxic Substances Control Act, and EPA Underground Storage Tank (UST) Finder

- NDDEQ databases: General Incidents 1975–2020, Oilfield Incidents 1975–2020, and Incident Reports 2021–Present

One RCRA site, Mavo Systems (RCRA ID: NDR000012161), is listed within the Study Area (EPA, 2025b). The site is approximately 0.4 miles west of the Project Route of the Oliver Transmission Line in Morton County. No additional information or details about the nature of this site are provided in the EPA database. No USTs are listed within the Study Area (EPA, 2025c).

One NDDEQ environmental incident (Incident ID: EIR2046) was identified within the Study Area (NDDEQ, 2025a). The incident involved a tractor-trailer transporting 13 totes of a water-based industrial cleaning agent that overturned along North Dakota Highway 21, resulting in five totes rupturing and partially releasing their contents within the highway right-of-way. The entire extent of the spill was cleaned up.

North Plains also conducted a Phase I Environmental Site Assessment for the Morton County Converter Station location. The assessment did not identify any known recognized environmental conditions at the location or the surrounding areas.

6.3.2 Avoidance and/or Minimization

6.3.2.1 Residences and Businesses

During construction, effects on existing residences and buildings adjacent to the Project may include noise and dust from construction equipment and temporary disturbance due to construction activities. Post-construction disturbance impacts will be minimal and related to maintenance activities, including periodic vegetation management and inspection.

North Plains will notify landowners via letter, phone, or in person of planned construction activities prior to scheduled construction, as required by applicable permit conditions or in agreement with the landowner.

Construction on the Project will typically occur Monday through Saturday with a typical construction workday of at least 10 hours in duration that will occur mostly during daytime hours between 7:00 a.m. and 7:00 p.m. However, weather conditions, site conditions, specialized construction techniques, emergencies, or other circumstances may necessitate extended work on Sundays and holidays. North Plains developed the following plans that will assist with maintaining public safety in residential and commercial areas.

- The Fire Prevention and Suppression Plan describes the safety measures that will be implemented during construction activities to prevent fires, and the emergency procedures to be implemented in the event of a fire, including notifications (see Attachment D of the CMRP in Appendix G).

- The Traffic and Transportation Management Plan describes the safety measures to be employed when construction activities occur at road, highway, and railroad intersections (see Attachment K of the CMRP in Appendix G).

North Plains has worked, and will continue to work closely with landowners, agencies, and other stakeholders to minimize effects on existing residential or commercial areas. North Plains sited the Project to avoid the removal of existing dwellings, barns, or other structures during construction. North Plains does not anticipate any long-term adverse impacts to existing residential areas and commercial development due to construction of the Project.

6.3.2.2 Cities

The Project Corridor is not within any incorporated cities/towns. Construction and operation of the Project will have minimal impacts on the security and safety of the local communities. As a result, no specific avoidance or minimization measures are required.

Local cities have benefitted and will benefit from North Plains' Community Investment Program, as discussed in Section 6.1.2.2. North Plains has also conducted community outreach efforts at local cities through public engagement events and open houses, as discussed in Section 7.2.21.

6.3.2.3 Military Operations

To date, no military operations agencies/organizations have responded to the Project notification letter. The Project is located approximately 36 miles south of the nearest ICBM launch or launch control facility. As a result, no specific avoidance or minimization measures are required.

6.3.2.4 Sound

Construction will result in an increase in sound levels within the Project workspace. Construction sound levels are highly variable, as the equipment in use at a construction site will change with the construction phase and the type of activities being performed. Construction activities will be performed with standard heavy equipment such as track excavators, backhoes, bulldozers, dump trucks, semi-trucks with trailer, and pick-up trucks.

To minimize the effects of construction noise at nearby noise sensitive areas, North Plains will limit construction to daytime hours to the extent practicable, maintain construction equipment in good working order, and use mufflers for equipment exhaust. Construction on the Project will typically occur on a 6-day work week, Monday through Saturday, with a typical construction workday of at least 10 hours in duration that typically will occur during daytime hours between 7:00 a.m. and 7:00 p.m. Nighttime work activities will be limited to the extent possible to minimize impacts associated with construction noise and lighting. However, weather conditions, site conditions, emergencies, or other circumstances may necessitate extended work outside of typical workday hours, including work at night and on Sundays and holidays.

Construction sound levels will be variable. People at nearby residences and buildings will hear the construction noise, but the exposure will be short-term. Because of the temporary nature of construction noise, no adverse or long-term effects are anticipated. Construction noise, while varying according to equipment in use, will be mitigated by the attenuating effect of distance and the intermittent and short-lived nature of the construction noise. Construction and operation of the Project will comply with applicable local sound requirements. Given the short-term and temporary nature of construction, and mitigation measures described above, no significant impact is anticipated during construction.

Paxwood Acoustics conducted sound modeling of the Morton County Converter Station. The model included the primary equipment that can create regular operational sound. The nearest

residence to the Morton County Converter Station is approximately 0.48 miles. The highest predicted sound level at a nearby residence is 42 dBA. No additional mitigation measures are necessary since there will be minimal noise impacts from the operation of the Project.

Audible noise from HVDC and AC transmission lines is often barely distinguishable from general background noise. Transmission conductors can emit a noise that is called corona under certain conditions. Corona from transmission line conductors can generate electromagnetic “noise” at the same frequencies transmitted by radio and television signals. Corona noise has a crackling sound and is due to corona discharges—the small amount of electricity ionizing the moist air near the conductors. Corona consists of the breakdown or ionization of air within a few centimeters of conductors and hardware. The level of noise depends on conductor conditions, voltage level, and weather conditions. During heavy rain, the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, noise from transmission lines (corona noise) may be more perceivable because it is not being masked by the sounds of rain, but the noise levels produced are equal to approximately household background levels. During dry weather, noise from transmission lines is barely perceptible by humans. Several other factors, including conductor voltage, shape and diameter, and surface irregularities such as scratches, nicks, dust, or water drops can affect a conductor’s electrical surface gradient, and therefore, its corona noise emission levels. The way conductors are arranged on the support poles also affects corona noise production. Corona effects are expected to be low enough that no objectionable audible sound will result outside the Project Corridor.

Aeolian vibration can be produced when a steady flow of wind interacts with an object such as a transmission line. Wind must blow steadily and perpendicular to the lines to set up oscillating forces. The resulting vibration can produce resonance if the frequency of the vibration matches the natural frequency of the line. However, sound produced by aeolian vibration is expected to be minimal outside of the Project Corridor.

No significant impacts from sound are anticipated during construction or operation of the Project.

6.3.2.5 Electromagnetic Fields

For several decades, numerous national and international scientific and health agencies have reviewed the scientific literature on Extremely Low Frequency electric and magnetic field exposure from AC fields and health, including the National Institute of Environmental Health Sciences (NIEHS, 1998), the International Agency for Research on Cancer (IARC) (2002), the World Health Organization (WHO) (2007), the Scientific Committees of the European Commission (Scientific Committee on Emerging and Newly Identified Health Risk [SCENIHR], 2015), and the Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) (2023), among others. These agencies evaluate evidence from all relevant studies, including observational studies of human health (epidemiology studies) and controlled laboratory experiments conducted with animals (in vivo) or cells (in vitro). Agencies consider the totality of the research due to the inherent strengths and weaknesses of each study type.

Agencies have been consistent in their analysis of the literature on EMFs and health. After reviewing the full body of literature, none of the agencies cited has concluded that EMFs cause adverse health effects to humans or animals at the levels to which people are routinely exposed to in their daily lives. The most recent evidence review published by SCENIHR in 2015 states, "no mechanism that operates at levels of [EMF] exposure found in the everyday environment has

been firmly identified and experimentally validated," as a cause of "biological effects or epidemiological associations" (SCENIHR, 2015; p. 225). Given the information previously presented, no adverse impacts to the public from EMF are anticipated.

6.3.2.6 Hazardous Materials and Hazardous Waste

Small amounts of hazardous substances, primarily in the form of fuels and lubricants, will be present in equipment or storage containers at construction sites and material storage yards. There is a low potential for inadvertent spills or leaks of hazardous liquids during refueling, equipment operation or maintenance, or storage during Project construction.

North Plains will implement the mitigation measures outlined in its Spill Prevention and Response Plan and Hazardous Materials and Waste Management Plan (see Attachment E of the CMRP in Appendix G), currently in development, to minimize potential impacts on groundwater. North Plains will prohibit storage of hazardous materials, chemicals, fuels, lubricating oils, and other petroleum products in the vicinity of identified active private water wells and identified public or municipal water wells, in accordance with the CMRP. If refueling or use of other hazardous liquids must occur within these setback areas, North Plains will monitor the activity and will have spill response equipment onsite and readily available. Should a spill occur, North Plains will notify the appropriate agency and/or emergency response authorities.

6.4 CULTURAL RESOURCES

6.4.1 Description of Resources

Section 106 (36 Code of Federal Regulation (CFR) 800) of the National Historic Preservation Act of 1966 (NHPA) found in Title 54 of the U.S. Code Section 306108, as amended, requires federal agencies such as the DOE to identify and assess the effects of the Project on historic properties and to afford the North Dakota State Historic Preservation Office (SHPO) an opportunity to comment if a Project would adversely affect historic properties. Historic properties are defined in the NHPA (36 CFR 60) as districts, buildings, structures, sites, or objects that are eligible for listing in the National Register of Historic Places (NRHP). For this Project, the DOE is the lead federal agency responsible for compliance with the NHPA.

The regulations for implementing Section 106 (36 CFR 800) require federal agencies to:

- consult with SHPOs, federally recognized Native American Tribes, and other consulting parties for undertakings with the potential to affect historic properties;
- identify any historic properties that may be affected by an undertaking; and
- avoid, minimize, or mitigate adverse effects on historic properties.

To assist DOE in meeting its obligations under the NHPA, North Plains conducted a Class I Literature Review and performed Class III archaeological and architectural surveys to identify cultural resources that may be affected by the Project. The results of these studies will be summarized in two reports. The results of the Class III inventory from 2022-2023 are included in a report that is nearing completion. The results of the Class III inventory from 2024-2025 will be included in an addendum report that is underway. A summary of the Class I and Class III Cultural Resources Inventory is included in Appendix I-1. All cultural resources work is being conducted

under the supervision of cultural resources specialists with qualifications that meet the requirements of involved federal agencies.

As part of the Section 106 NHPA consultation being led by the DOE, a Programmatic Agreement has been developed through joint coordination between North Plains, DOE, North Dakota SHPO, Montana SHPO, interested Native American Tribes, and the cooperating federal agencies. The Programmatic Agreement outlines roles and responsibilities for the Section 106 process on the Project, discusses what work has already been completed by North Plains, and establishes how agency reviews and consultation will be handled through the completion of the Project. Under the Programmatic Agreement, the North Dakota SHPO, along with other consulting parties, will review cultural resource reports and the potential effects of the Project.

Cultural resources can be defined as any resource that has cultural character (King, 2012). Expanding upon this simple definition, “cultural resources” include all landscapes, buildings, sites, districts, structures, or objects that have been created by or associated with humans and are considered to have historical or cultural value. The term “historic property” includes only those cultural resources that are listed in or eligible for listing on the NRHP. Finally, “site” refers to any location in which human activities have occurred and where material evidence of those activities remains. Furthermore, sites are defined as 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 of these qualities, within an area of approximately 60 square meters (645 square feet), and spatially discrete from areas of similar content by approximately 60 meters (approximately 200 feet) (State Historical Society of North Dakota [SHSND], 2020). Isolated finds are defined as areas of past human activity older than 50 years, containing five or fewer artifacts with limited potential to possess subsurface cultural materials. Site leads are either a) isolated finds, as defined above, with the potential to possess substantial subsurface deposits, or b) locations reported by non-archaeologists as containing cultural resources that have not been field verified by an archaeologist (SHSND, 2020).

The Class I Literature Review identified that the Project Route is within 1 mile of 150 previously conducted surveys completed between 1978 and 2024. The previous surveys were completed for a range of project types, including roads, water pipeline systems, electrical transmission lines, oil and gas development, telecommunication infrastructure, material borrow areas, federal and local grazing projects, bridge inventories, wind farms, and archaeological studies. Of these previous surveys, 46 surveys intersect the Project Route and intersect less than 1 percent of the overall Project Route. The Class I Literature Review also identified that the Project is within 1 mile of 191 previously recorded archaeological sites, site leads, architectural sites, isolated finds, and Tribally identified sites. Of those resources, some have been determined or recommended as eligible for listing in the NRHP, while others remain unevaluated or have been determined to be not eligible for listing in the NRHP.

The Class I Literature Review identified that Project Route crosses six previously identified sites. The resources consist of four site leads, one site, and one isolated find. Four sites remain unevaluated in regard to eligibility for listing in the NRHP. The remaining two sites have been recommended as not eligible for listing in the NRHP.

North Plains conducted Class III cultural resource surveys in 2022 through 2025 in accordance with the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (SHSND, 2020). Class III surveys were completed in the Project Corridor and Project workspace to cover all areas potentially impacted by construction activities. As of the filing of this document, Class III pedestrian surveys of 99 percent of the Project have been completed. The remaining

survey work is scheduled to be completed during the 2026 field season. A total of 408 archaeological resources were identified during the 2022 through 2025 field seasons in North Dakota. Within the Project Corridor, 108 sites were documented during the Class III cultural resource surveys. The resources consist of 26 site leads and 82 sites. Within the Project Corridor, 71 sites documented during surveys remain unevaluated in regard to eligibility for the NRHP, and 37 sites were determined not eligible for listing in the NRHP. Of these sites within the Project Corridor, the Project Route crosses 58 sites, which consists of 48 sites and 10 site leads. The Project Route crosses 38 sites documented during surveys which remain unevaluated in regard to eligibility for the NRHP, and 20 sites which were determined not eligible for listing in the NRHP.

As part of Project development, North Plains worked with a team of Federal Indian Law and Tribal engagement experts to identify Tribal Nations with potential historic interest in and near the Study Area. Based on this analysis, the following Tribal Nations were identified in both North Dakota and Montana:

- Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
- Blackfeet Tribe of the Blackfeet Indian Reservation of Montana
- Cheyenne River Sioux Tribe of the Cheyenna River Reservation
- Chippewa Cree Indians of the Rocky Boy's Reservation
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Crow Creek Sioux Tribe of the Crow Creek Reservation
- Crow Tribe of Montana
- Flandreau Santee Sioux Tribe of South Dakota
- Fort Belknap Indian Community of the Fort Belknap Reservation
- Little Shell Tribe of Chippewa Indians of Montana
- Lower Brule Sioux Tribe of the Lower Brule Reservation
- Northern Cheyenne Tribe of the Northern Cheyenne Reservation
- Oglala Sioux Tribe
- Rosebud Sioux Tribe of the Rosebud Indian Reservation
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation
- Santee Sioux Nation
- Spirit Lake Tribe
- Standing Rock Sioux Tribe of North and South Dakota
- Three Affiliated Tribes of the Fort Berthold Reservation
- Turtle Mountain Band of Chippewa Indians (including the Indian Community of Trenton Indian Service Area)
- Yankton Sioux Tribe

TCS from 18 interested Tribes participated in fieldwork alongside the archaeologists during the 2022, 2023, 2024, and 2025 survey seasons. North Plains' Tribal Engagement Team coordinated conversations with Tribal Historic Preservation Officers (THPOs) throughout the region and handled the logistics to ensure TCS from each participating Tribe were able to survey the respective area. During surveys, a monthly meeting with participating THPOs is held with North Plains and the surveys for that month are discussed.

6.4.2 Avoidance and/or Minimization

The results of the Class III inventory from 2022-2023 are included in a report that is nearing completion. The results of the 2024-2025 field seasons will be included in an addendum report

that is underway. The DOE will include the results of the reports in their Section 106 process, which includes consultation with cooperating agencies, the North Dakota SHPO, Tribes, and interested parties.

North Plains has designed the Project to avoid impacting cultural resources. Physical disturbance of cultural resource site boundaries will be avoided during construction by maintaining a buffer around site boundaries via flagging, fencing, or other appropriate methods. Where avoidance of a site boundary is not possible, North Plains will implement measures to ensure the sensitive features within the site are avoided, including: fencing and monitoring by a qualified archaeologist or Tribal Cultural Specialist during construction; installing construction mats for driving of heavy equipment; or other treatment options developed under the Programmatic Agreement between DOE, SHPOs, cooperating agencies, Tribes, and North Plains. Through these measures and in consultation with key stakeholders including the North Dakota SHPO, impacts to cultural resources will be avoided.

As discussed in the CMRP, North Plains will prepare constraint maps for the Project prior to construction that will identify buffer zones for sensitive features. North Plains will include notations on the constraints map to direct personnel to the appropriate environmental plans/or permit conditions that stipulate the activities, restrictions, and/or BMPs to be employed at each sensitive feature.

North Plains is preparing a draft Plan for the Unanticipated Discovery of Cultural Resources and Human Remains for construction activities to define a process to address the unforeseen discovery of cultural resources or human remains during construction.

Field visits conducted by THPOs and monthly coordination meetings were completed to identify mitigation techniques for Tribally identified sites along the Project Corridor and Project workspace. Throughout the environmental review phase of the Project, North Plains will continue to work with Tribal Cultural Specialists and THPOs to identify places of traditional or religious importance to Native American Tribes. Additionally, the federal agencies will comply with Section 106 requirements in the NHPA.

Further details regarding North Plains' coordination with the Tribal government are discussed in Section 7.2.16. Letters of support for the Project from Tribal governments are included in Appendix J-14.

6.5 VISUAL RESOURCES

6.5.1 Description of Resources

Visual resources are those characteristics of the landscape visible to residents and visitors. Descriptions of visual resources include the aesthetic value of the natural and developed landscape, the public value of viewing the natural landscape, and the visibility of the landscape from sensitive viewpoints (e.g., recreation areas, rivers, and highways).

6.5.2 Avoidance and/or Minimization

Visual sensitivity is based on a mixture of the type of users, the quantity of users, the level of interest in the landscape, the duration of views, the land use context, and the proximity of viewers to a proposed change in the landscape. For example, recreational sightseers are likely to be more sensitive to visual change than workers commuting to jobs. Viewers within the foreground

viewing distance (0.5 mile) are likely to be more sensitive to a visual modification than someone with a middle ground viewing distance (0.5 mile to 4 miles) or more. In addition, the visual effects experienced from the Project will depend largely on the perceptions of the observers across various landscapes.

Although the Study Area already has existing roads, distribution lines, and transmission lines in some viewsheds, the visual contrast added by the new transmission structures and lines may be perceived as a visual disruption. Where trees need to be cleared, this change to the landscape is typically a noticeable visual impact. North Plains will implement mitigation measures including: minimizing tree clearing where possible by using only the necessary right-of-way width to safely construct and operate the Project, using perpendicular crossings of roadways where possible, paralleling existing roadways and travel paths to not create new corridors of disturbance, setting back poles as far as possible from roadway crossings, and utilizing a color of poles that will best blend into the landscape.

Views may have long-term impacts from the addition of support structures, conductors, and cleared rights-of-way, as well as short-term impacts from temporary buildings and shelters, fences, construction-related equipment, and material storage. In addition, temporary workspaces cleared for construction may be visible, such as for Project access roads, structure pads, and wire pulling and tensioning areas.

Direct, short-term, and long-term impacts to people and scenery will occur during construction. These include visual changes to the context of the human environment, or modifications of the characteristic landscape, and/or from introductions of contrasting forms, lines, colors and textures of landform, vegetation, and structures needed to accommodate Project construction activities.

Direct, long-term impacts to views similar to those discussed for the construction phase are expected during operations where there are permanent structures and cleared rights-of-way. Construction-related impacts of equipment travel, the presence of construction personnel, and the installation of the transmission line segments will be replaced by occasional transmission line and right-of-way maintenance activities. However, these impacts will be temporary and short duration and limited to maintenance periods. Impacts to users will depend on if users are present to observe maintenance activities. If no observers are present, there will be no additive impacts to visual resources.

6.6 PUBLIC LANDS, EASEMENTS, AND RECREATIONAL AREAS

6.6.1 Description of Resources

North Plains performed a review of public lands, easements, and recreational areas within the Study Area. The review did not identify any of the following within the Study Area:

- national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas (designated Commission exclusion areas under NDAC 69-06-08-02(1)(a);
- state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves (designated Commission exclusion areas under NDAC 69-06-08-02(1)(b);
- BLM-administered land;

- U.S. Fish and Wildlife Service (USFWS)-managed Waterfowl Production Area fee-owned lands;
- USFWS grassland or wetland easements;
- North Dakota Game and Fish fishing lakes;
- county parks and recreational areas (designated Commission exclusion areas under NDAC 69-06-08-02(1)(c);
- municipal parks (designated Commission exclusion areas under NDAC 69-06-08-02(1)(c);
- parks owned or administered by other governmental subdivisions (designated Commission exclusion areas under NDAC 69-06-08-02(1)(c);
- designated hiking trails such as the Maah Daah Hey Trail or White Butte hiking trail; or
- designated campgrounds.

The following sections present the public lands, easements, and recreation areas within the Study Area, as known or available through public resources.

6.6.1.1 Federally Managed Lands

U.S. Forest Service

The USFS, through the NFS, manages 800,000 acres of land within the LMNG in the western part of North Dakota. The LMNG is discussed further below. The NFS lands are managed under the 2001 Land and Resource Management Plan (LRMP) for the Dakota Prairie Grasslands (USFS, 2001) and are part of the Dakota Prairie Grasslands, which are divided between the McKenzie and Medora Ranger Districts. The LRMP provides guidance on land use, resource conservation, and management practices to balance multiple uses, including grazing, recreation, wildlife habitat, and energy development.

The NFS lands within the LMNG contain badlands, rugged terrain, and mixed grass prairie. Recreational activities include biking, camping, fishing, hiking, horseback riding, hunting, and off-highway vehicle use where permitted.

Given the Project's interconnection points and the nearly contiguous 109 mile north-south extent of NFS land from near Alexander to Mammoth in western North Dakota, there is no reasonable alternative but to cross the NFS land. The HVDC Transmission Line will cross approximately 10.2 miles on NFS land in Golden Valley and Slope counties, consisting of 47 structures. NFS lands within the Study Area are shown on Figure A-6 in Appendix A.

NFS lands crossed by the Project are within the proclamation area of the LMNG. NFS lands themselves are not classified as an avoidance area, designated or registered national grasslands, under NDAC 69-06-08-02(2)(a). That classification applies to the LMNG, as discussed below.

A portion of an Inventoried Roadless Area is within the Study Area, but the Project Route avoids

this area. Inventoried Roadless Areas are designated by the USFS to restrict road construction and limit development, preserving natural habitats and wilderness characteristics. Inventoried Roadless Areas within the Study Area are shown on Figure A-6 in Appendix A.

Details regarding USFS sensitive plant species are discussed in Section 6.10.

Little Missouri National Grassland

The LMNG is part of the NFS and is administered by the USFS. The LMNG spans approximately 109 miles from north to south, varies in width, and covers about 1.0 million acres in western North Dakota. Lands within the proclamation area of the LMNG are interspersed among federally owned, state-owned and private lands, in Billings, Golden Valley, McKenzie, and Slope counties. The LMNG accounts for roughly 2.3 percent of North Dakota's total land area.

The LMNG is classified as an avoidance area, designated or registered national grasslands, under NDAC 69-06-08-02(2)(a). Given the Project's interconnection points and the north-south extent of the LMNG in western North Dakota, there is no reasonable alternative but to cross the LMNG. The HVDC Transmission Line will cross approximately 44 miles on the LMNG in Golden Valley and Slope counties. The Project location within the LMNG is shown on Figure A-4 in Appendix A.

National Wildlife Refuge

White Lake National Wildlife Refuge is present with the Study Area in Slope County. The Refuge is managed by the USFWS and is one of over 565 refuges and 38 wetland management districts in the National Wildlife Refuge System. The Refuge provides habitat for many wildlife species, with high concentrations of waterfowl and shorebirds during spring and fall migration. The Refuge is located approximately 1 mile from the centerline of the HVDC Transmission Line and is shown on Figure A-4 in Appendix A.

6.6.1.2 State Managed Lands

State managed lands, including state parks, state nature preserves, state recreation areas, state forest service lands, Wildlife Management Areas (WMA), and State Trust Land, were reviewed for presence within the Study Area. WMAs and State Trust Lands are present within the Study Area and are discussed below.

State Trust Lands

State Trust Lands are present within the Study Area. State Trust Lands are held in trust by the NDDTL. NDDTL oversees mineral acres and other assets utilized for the benefit of public schools and other institutions in North Dakota. Most State Trust Lands are leased for agricultural purposes, primarily cattle grazing. Over 99 percent of State Trust Lands are open for non-vehicular access by the public for recreational purposes, unless otherwise posted. These lands are dedicated to producing income for the trusts and public access is only allowable if it does not conflict with the constitutional mandate to produce income for the trusts. Common permitted recreational activities include hiking, bird watching, berry picking, hunting, and fishing. The HVDC Transmission Line and the Oliver Transmission Line will cross approximately 4.6 miles and 0.1 miles of State Trust Lands, respectively, totaling about 110.3 acres and 2.9 acres of right-of-way. State Trust Lands within the Study Area are shown on Figure A-6 in Appendix A.

Wildlife Management Areas

WMAs are managed by the North Dakota Game and Fish Department (NDGFD) and are generally open to hunting, fishing, trapping, and other recreational activities such as hiking and bird watching. WMAs are present within the Study Area (NDGFD, 2019d). The nearest WMAs are the Otter Creek WMA in Grant County, located approximately 0.3 miles from the centerline of the HVDC Transmission Line, and the Wilbur Boldt WMA in Oliver County, located approximately 0.2 miles from the centerline of the Oliver Transmission Line. WMAs within the Study Area are shown on Figure A-6 in Appendix A.

6.6.1.3 Easements and Agreements

Private Land Open to Sportsmen

Private Land Open to Sportsmen (PLOTS) areas are present within the Study Area. PLOTS is a program managed by the NDGFD that provides walk-in public access for hunting on enrolled private lands through agreements with landowners. The agreements are established for fixed terms, after which landowner participation is subject to renewal or expiration. The Project Route will cross eight PLOTS parcels, totaling approximately 6 miles and 147 acres of right-of-way. PLOTS within the Study Area are shown on Figure A-6 in Appendix A.

County Water Management District Easements

Within the Study Area are easements held by the Oliver County Water Resource District and the Morton County Water Management District for the Square Butte 5 Dam, also known as Schwalbe Dam and Hatzenbihler Dam along a tributary to Square Butte Creek in Morton County. The dam was constructed in 1979 and was designed for flood control and is not open to the public.

6.6.2 Avoidance and/or Minimization

6.6.2.1 Federally Managed Lands

U.S. Forest Service

NFS land spans a vast area in western North Dakota, stretching from near Highway 200 near Fairview to U.S. Highway 12 near Marmarth, creating an approximately 109-mile-long nearly contiguous patchwork of NFS land. The extensive coverage of NFS land and the multitude of avoidance constraints, including environmental, cultural, and landowner considerations, in the area make it logistically difficult, if not nearly impossible, to route the HVDC Transmission Line in a way that entirely circumvents NFS lands.

Throughout the development of the Project, efforts were made to avoid designated or proposed Research Natural Areas (RNAs) and Special Interest Areas (SIAs) on NFS lands (USFS, 2001). RNAs are ecological reserves designated for nonmanipulative research, education, and maintenance of plant biodiversity. SIA are managed to protect sites with important physical, biological, and/or cultural characteristics for the purpose of public use and enjoyment. From Interstate 94 south, these areas include:

- Battle of the Badlands SIA;
- Black Butte SIA;
- Black Cottonwood SIA;

- Bullion Creek Type Formation SIA;
- Burning Coal Vein/Columnar Junipers SIA;
- Cannonball/Slope Contact SIA;
- Custer Trail/Davis Creek SIA;
- Pretty Butte SIA;
- Roundtop Butte SIA;
- Slope Type Formation SIA;
- Square Buttes SIA;
- Talkington Riparian Pools SIA;
- Limber Pines RNA;
- Little Missouri River RNA (proposed); and
- Ponderosa Pines RNA (proposed).

North Plains will require permission from the USFS to construct and operate the Project on NFS lands through a SUP. North Plains filed a Standard Form 299, Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property and draft Plan of Development (POD) to the USFS for a SUP on September 13, 2024. The USFS accepted the submission on October 24, 2024. The draft POD will be periodically updated in coordination with USFS at development milestones critical to the Project. Details regarding North Plains' coordination with the USFS are discussed in Section 7.2.2.

As part of the development of the Project, an EIS is being prepared as the Project crosses multiple federally managed lands including the NFS lands within the LMNG in North Dakota. The EIS includes an analysis of the Project's effects on these lands and considered input from the USFS, as well as alternatives and mitigation measures to minimize any adverse impacts. Upon completion of the EIS process and after reviewing public and agency comments, including those from the USFS, a Record of Decision will be issued. The Record of Decision will document the selected course of action for the Project and outline any conditions or mitigation measures necessary to ensure compliance with both environmental regulations and NFS land management objectives per the LRMP. The USFS will review the Project impacts and determine if the Project is consistent with the LRMP standards and guidelines, or if an LRMP amendment will be required.

Per the LRMP Chapter 1, Section P (Special Uses), which outlines Standards and Guidelines for transmission lines on NFS lands, the HVDC Transmission Line is not located within a USFS Experimental Forest, a developed recreation site, or an area with significant paleontological, archaeological, or historical resources. Although there are no existing overhead utility line corridors in the vicinity with which the HVDC Transmission could collocate while it crosses NFS lands, North Plains has sited the HVDC Transmission Line in areas adjacent to, or nearby, roads wherever possible.

While the HVDC Transmission Line has been designed to minimize disruption to land use activities on NFS lands to the extent practicable, some direct impacts to land use and land cover are unavoidable. Construction may cause short-term disruptions to recreational activities, depending on the user's location, the type of activity, and the phase of construction. Users may need to temporarily avoid certain areas for safety reasons, but any impacted activities, such as hiking or travel, will resume once construction is complete and the workspace has been restored. The Project avoids Inventoried Roadless Areas, and no impacts to these areas will occur.

Little Missouri National Grassland

The LMNG spans a vast area in western North Dakota, stretching approximately 109 miles long from near Highway 200 near Fairview to U.S. Highway 12 near Marmarth. Due to the large extent of the LMNG and the multitude of avoidance constraints, including environmental, cultural, and landowner considerations, within the boundary make it logistically difficult, if not nearly impossible, to route the Project in a way that entirely circumvents the LMNG.

The Project was routed to avoid multiple public heritage sites and recreation areas within the LMNG. From Interstate 94 south, these sites include, but are not limited to:

- Theodore Roosevelt National Park;
- Maah Daah Hey Trail;
- Buffalo Gap Campground;
- Recreation sites in and near the town of Medora;
- Rough Rider State Park;
- Bully Pulpit Golf Course;
- The 1876 Custer military trail and associated sites including:
  - East Hill Overlook;
  - Easy Hill Camp;
  - Initial Rock, Custer's Camp;
  - Custer's Snow Camp;
  - Sully's Waterhole;
  - Battle of the Badlands;
- Burning Coal Vein Campground; and
- White Butte and the White Butte hiking trail.

Just south of the LMNG, extending to the North Dakota-South Dakota state line in Bowman County, is a patchwork of BLM-managed land interspersed with private and state lands. This area also includes the Greater Sage-Grouse PCA, further contributing to land use constraints in southwestern North Dakota.

Details regarding North Plains' coordination with the USFS are discussed in Section 7.2.2.

National Wildlife Refuge

The Project does not pass through any National Wildlife Refuges. The White Lake National Wildlife Refuge is located approximately 1 mile from the Project Route on the HVDC Transmission Line. As a result, no specific avoidance or minimization measures are required.

6.6.2.2 State Managed Lands

State Trust Lands

North Plains filed a right-of-way application with the NDDTL on May 26, 2022. The right-of-way easement will be executed following review by NDDTL upon receipt of the Certificate and Route Permit from the Commission. Details regarding North Plains' coordination with the NDDTL, including on-site visits and discussions focused on optimizing the route alignment to minimize impacts on NDDTL-managed tracts, are discussed in Section 7.2.5.

Wildlife Management Areas

On December 7, 2022, North Plains met with NDGFD to discuss the proximity of the Project to the Otter Creek WMA. The NDGFD requested the HVDC Transmission Line be sited at least 0.25 miles from the edge of the WMA to avoid indirect impacts to the WMA, which North Plains has incorporated into the Project Route. Existing transmission lines cross and are adjacent to the Wilbur Boldt WMA due to the proximity of existing substations and converter stations that are operated by other entities. Further details regarding North Plains' coordination with the NDGFD are discussed in Section 7.2.3. No direct effects are anticipated to the WMAs; therefore, no mitigation is proposed.

6.6.2.3 Easements and Agreements

Private Land Open to Sportsmen

For lands enrolled in the PLOTS program crossed by the Project, North Plains will take steps to minimize impacts to the program's objectives. Construction will be limited on PLOTS land during hunting seasons for applicable species, based on the designated hunting units and species present in each area. Exact hunting season dates may vary each year, as they are set by the NDGFD based on factors such as wildlife population trends and federal guidelines.

North Plains will coordinate construction schedules on PLOTS land to avoid disrupting hunting seasons. The construction restrictions will be confirmed annually based on the NDGFD's hunting season schedule.

County Water Management District Easements

The Project crosses Oliver County and Morton County Water Resource District easements that were established for the construction of Square Butte 5 Dam. Based on topographic maps, the borrow pit for the dam appears to have been located directly east of the dam. The Project design includes two structures within the former borrow pit, a previously impacted area. North Plains has been coordinating with the Oliver County and Morton County Water Resource Districts as discussed in Section 7.2.20. The Project does not cross the dam or reservoir and will not interfere with the dam's operations; therefore, North Plains does not propose any mitigation.

6.7 LAND USE

6.7.1 Description of Resources

6.7.1.1 Land Cover

The land cover within the Study Area was analyzed using geographic information system (GIS) data from the U.S. Geological Survey's (USGS) National Land Cover Database (NLCD) (Multi-Resolution Land Characteristics Consortium, 2024a). Brief definitions of each NLCD class used in this analysis are provided below.

Developed

- Developed, Open Space: Areas with mostly lawn/grass with limited built features; impervious cover <20 percent. Includes large-lot housing, parks, and golf courses.

- Developed, Low Intensity: Areas with a mix of structures and vegetation; impervious cover 20–49 percent. Typically single-family housing.

- Developed, Medium Intensity: Areas with more concentrated development; impervious cover 50–79 percent. Often denser residential areas.

Barren

- Barren Land: Areas with very little vegetation (<15 percent) such as exposed rock, sand, gravel pits, strip mines, or other earthen material.

Forest

- Deciduous Forest: Areas dominated by trees >5 meters tall with >20 percent cover, where >75 percent of species are deciduous.

- Evergreen Forest: Areas dominated by trees >5 meters tall with >20 percent cover, where >75 percent of species are evergreen.

- Mixed Forest: Areas dominated by trees >5 meters tall with >20 percent cover, where neither deciduous nor evergreen species exceed 75 percent.

Shrubland

- Shrub/Scrub: Areas dominated by shrubs <5 meters tall or young/stunted trees, with shrub cover >20 percent.

Herbaceous

- Grassland/Herbaceous: Areas dominated by herbaceous vegetation (>80 percent) not intensively managed; may be used for grazing.

Planted/Cultivated

- Pasture/Hay: Areas planted with grasses or legumes for grazing or hay production, with vegetation >20 percent.

- Cultivated Crops: Areas used for annual or perennial crop production, including tilled fields, with vegetation >20 percent.

Wetlands

- Emergent Herbaceous Wetlands: Areas with perennial herbaceous vegetation (>80 percent) and periodically saturated soils.

- Woody Wetlands: Areas with forest or shrub vegetation (>20 percent) and periodically saturated soils.

Open Water

- Open Water: Areas of open water containing <25 percent vegetation or exposed soil.

Table 6.7.1-1 provides a summary of existing land cover within the Project Corridor and Study Area. Land cover within the Study Area is shown on Figure A-5 in Appendix A. Common land use types are discussed in the subsections below. Section 6.8 provides further discussion on wetlands and open water. Section 6.9 provides further discussion on herbaceous areas, which are addressed in the Grassland subsection, and on forest and shrubland areas, which are addressed collectively as wooded areas.

TABLE 6.7.1-1

Land Cover within the Project Corridor and Study Area

Land Use Category	Project Corridor (acres)	Study Area (acres)
Barren Land	0.01	25.7
Cultivated Crops	3171.0	50349.8
Deciduous Forest	28.6	870.0
Developed, Low Intensity	143.6	949.7
Developed, Medium Intensity	1.0	38.7
Developed, Open Space	371.9	3331.3
Emergent Herbaceous Wetlands	30.6	604.2
Evergreen Forest	0.0	2.6
Grassland/Herbaceous	5319.4	81317.1
Mixed Forest	1.2	68.6
Open Water	3.5	158.3
Pasture/Hay	371.8	5585.5
Shrub/Scrub	399.9	7333.1
Woody Wetlands	7.3	183.1

Source: Multi-Resolution Land Characteristics Consortium. 2024b. Annual National Land Cover Database (NLCD): Annual NLCD Collection 1.0: 2023 Land Cover of Conus. U.S. Geological Survey, Sioux Falls, South Dakota. Released October 2024. doi: 10.5066/P94UXNTS. Available online at: https://www.sciencebase.gov/catalog/item/655ceb8ad34ee4b6e05cc51a.. Accessed November 2025.

6.7.1.2 Agricultural Land

Agricultural lands, including cultivated crops and hay/pasture, are the second most common land cover area within the Study Area (Multi-Resolution Land Characteristics Consortium, 2024b). Agricultural land within the Study Area in western North Dakota primarily supports crop production and livestock grazing. Common crops include wheat, barley, corn, soybeans, and sunflowers, with areas dedicated to forage crops like alfalfa to support cattle operations. While much of the agriculture relies on dryland farming practices, irrigation is present in Heart River and Little Missouri River valleys.

6.7.1.3 Rangeland

Open lands, including herbaceous grasslands, are the most common land cover area within the Study Area (Multi-Resolution Land Characteristics Consortium, 2024b). Livestock grazing is a significant use of rangeland, with cattle being the predominant livestock in the area.

6.7.1.4 Developed Areas

In general, the Project is located in rural and rugged terrain that lacks existing utilities and infrastructure to support residential and/or commercial development. A majority of the municipality and county planning documents, such as growth policies, and conversations with planners, clerks, and other personnel, indicate no residential or commercial development is planned within or adjacent to existing developed areas.

6.7.2 Avoidance and/or Minimization

6.7.2.1 Land Cover

Construction of the Project will result in the permanent conversion of approximately 96.3 acres and temporary disturbance of approximately 2,503 acres. Table 6.7.2-1 summarizes the estimated permanent and temporary land cover impacts associated with the Project.

TABLE 6.7.2-1

Estimated Land Cover Impacts

Land Use Category	Temporary Impacts (acres)	Permanent Impacts (acres)
Barren Land	0.0	0.0
Cultivated Crops	892.6	37.5
Deciduous Forest	3.6	0.1
Developed, Low Intensity	8.0	2.7
Developed, Medium Intensity	0.0	0.0
Developed, Open Space	35.9	23.5
Emergent Herbaceous Wetlands	1.9	0.1
Evergreen Forest	0.0	0.0
Grassland/Herbaceous	1,377.9	29.2
Mixed Forest	0.6	0.1
Open Water	0.0	0.0
Pasture/Hay	91.3	0.2
Shrub/Scrub	90.6	3.2
Woody Wetlands	0.6	0.0
PROJECT TOTAL [a]	**2,503.0**	**96.3**

[a] The totals may not add up due to rounding. The locations of the fiber/line splicing areas, fiber repeater stations, and contractor laydown yards have not been determined and are not included in the estimated temporary and permanent impacts.

Source: Multi-Resolution Land Characteristics Consortium. 2024b. National Land Cover Database Class Legend and Description. Available online at: https://www.mrlc.gov/data/legends/national-land-cover-database-class-legend-and-description. Accessed November 2025.

After construction is complete, North Plains will restore temporary construction workspaces (including those for structure pads, wire pulling and tensioning areas, and guard structures) and temporary access roads and overland travel lanes as near as practicable to pre-construction conditions, as described further in Section 5.1.5 and the CMRP. Where needed, North Plains will decompact soils and revegetate workspaces in accordance with Section 6 of the CMRP, landowner agreements, and applicable permit requirements. North Plains will install and maintain erosion and sediment control BMPs until final stabilization is achieved, as discussed in Sections 5.7 and 6.3 of the CMRP. North Plains will implement measures described within the Invasive and Noxious Species Management Plan to manage noxious weeds during Project construction and operations (see Attachment F of the CMRP in Appendix G).

6.7.2.2 Agricultural Land

The Project was designed to avoid and minimize impacts to agricultural operations to the extent possible. North Plains sited the Project to follow agricultural field edges and existing linear infrastructure such as roads and utility lines to the extent practicable. Each proposed structure location was reviewed with the respective landowner, and adjustments were made based on their input to address specific operational needs.

Construction of the Project will temporarily impact a total of 1,021.0 acres of agricultural land. Temporary impacts on agricultural land from construction activities could include crop disturbance, disruption of normal farming activities, soil erosion, soil compaction and rutting, and the spread of invasive and noxious species. North Plains will implement measures described within the Invasive and Noxious Species Management Plan to manage noxious weeds during Project construction and operations (see Attachment F of the CMRP in Appendix G). Operation of the Project will result in the permanent conversion of 35.7 acres of agricultural land.

Existing agricultural activities, such as grazing and crop cultivation, will experience short-term and localized interruptions within the Project workspace until vegetation can be reestablished. Crops will be mowed or disced to ground-level unless landowners prefer to remove them prior to construction. North Plains will compensate landowners for any damage to or loss of crops. Soil compaction from heavy equipment can reduce plant productivity and water infiltration; North Plains will decompact cultivated fields as needed to restore soils per the CMRP, landowner agreements, and permit conditions. Construction may require existing irrigation systems to be temporarily impacted. Construction could also interfere with other agricultural activities, such as the movement of livestock and equipment, aerial pesticide spraying, or the temporary loss of livestock forage.

Following construction, North Plains will generally allow use of agricultural land within the right-of-way to continue as before provided the activity does not conflict with the safe operation of the Project. Activities such as row crop agricultural production and livestock grazing are expected to continue around Project facilities after construction.

North Plains has developed a draft Agricultural Impact Mitigation Plan (see Attachment B to the CMRP in Appendix G). The Agricultural Impact Mitigation Plan addresses prevention of interference with irrigation systems, topsoil segregation, decompaction, fence repairs, and livestock management.

6.7.2.3 Rangeland

North Plains will maintain rights-of-way along the transmission lines as herbaceous, open land for the life of the Project. North Plains will allow most land uses to continue as before, provided they do not interfere with the safe operation of the Project. For construction on rangeland, North Plains will follow the avoidance and minimization measures described in Section 6.7.2.1.

6.7.2.4 Developed Areas

North Plains is not directly impacting developed residential or commercial areas within the Project Corridor. Therefore, North Plains does not propose any mitigation measures.

6.8 GEOLOGICAL AND SOIL RESOURCES

6.8.1 Description of Resources

6.8.1.1 Landslide Deposits

A landslide refers to the movement of soils, rock, or debris down a slope resulting from natural or anthropogenic forces that exceed the strength of the materials composing the slope, causing them to give way to gravity. These forces can include one or more of the following: rainfall, snowmelt, erosion, groundwater level changes, seismic or volcanic activity, and human activities such as excavation, drilling, or blasting.

In response to the agency notification letter, the North Dakota Geological Survey (NDGS) stated that the project routes pass through areas where landslides have been previously mapped, particularly in Golden Valley, Slope, Grant, Morton, and Oliver counties and that these areas would best be avoided when placing surface structures such as transmission line towers. Landslides mapped by NDGS were identified using historical aerial photographs, recent digital imagery, and shaded relief models generated from LiDAR elevation data. Mapping was conducted digitally between 2016 and 2023. The Project Route crosses areas of landslide deposits mapped by the NDGS (2023) as shown on Figures A-4 and A-6 in Appendix A. Landslide deposits are common in southwest North Dakota, particularly on steep slopes adjacent to rivers and streams. With no reasonable alternative, the Project structures will be designed to span unstable areas to avoid direct impacts.

North Plains is conducting a geotechnical analysis, which will be completed prior to construction and used to finalize Project design.

6.8.1.2 Oil and Gas Production

The Study Area is within the Williston Basin, a region known for extensive oil and gas development. However, the Study Area avoids areas of high oil and gas production, such as the Bakken Formation, located north of the Study Area, and the Cedar Creek Anticline, located south of the Study Area. According to the North Dakota Department of Mineral Resources (NDDMR) map viewer there are no active oil or gas wells within the Study Area (NDDMR, 2025).

6.8.1.3 Coal Mines

Minable coal deposits are found throughout the western half of North Dakota (NDGS, 2009). BNI Coal, Ltd.'s Center Mine is located generally west of the northern portion of the Oliver Transmission Line. No active coal mines are located within the Project Study Area. According to the North Dakota Abandoned Mine Lands (AML) database (Commission, 2021), there are some abandoned mine lands within the Study Area and Project Corridor; however, the Project has been sited to avoid such areas (see Figure A-6, Appendix A).

6.8.1.4 Mineral Materials Mining

Western North Dakota contains areas with local mineral materials deposits of sand and gravel, scoria, and aggregates commonly found in current and historic floodplains (NDDMR, 2010). To assess mineral materials mines within the Study Area, numerous sources were used, including the USGS Mineral Deposit Database (USGS, 2023), North Dakota AML database (Commission, 2021), and North Dakota State Soil Conservation Committee annual reports (North Dakota State

Soil Conservation Committee, 2023). Based on these sources, the Project does not cross any active or abandoned mineral materials mines.

6.8.1.5 Soils

The Project Study Area spans two Major Land Resource Areas (MLRAs), each defined by similar soil types, topography, and climate conditions. These include the Northern Great Plains Spring Wheat Region, which covers much of North Dakota, and the Western Great Plains Range and Irrigated Region, which extends through western North Dakota and continues southward along the Rocky Mountain front range to Texas (USDA, NRCS, 2022).

The Northern Great Plains Spring Wheat Region consists of loam and clay loam soils derived from glacial till. These soils have moderate to high fertility and support dryland agriculture, including spring wheat, barley, and hay production. While they generally have good structure, they can be prone to wind and water erosion, particularly on exposed slopes.

The Western Great Plains Range and Irrigated Region contains loamy and sandy soils influenced by alluvial and eolian processes. Natural vegetation consists primarily of mixed-grass prairie, with much of the area used for grazing. However, portions along the Missouri River with irrigation support row crops. The sandy soils in this region have variable drainage characteristics and may require stabilization measures in disturbed areas.

6.8.2 Avoidance and/or Minimization

6.8.2.1 Landslide Deposits

Potential landslide impacts to the Project exist at locations with steep slopes. To mitigate these impact risks, North Plains will place structures to avoid slopes greater than 30 percent. In addition, North Plains will complete geotechnical borings at select structure locations to ensure that the subsurface is geotechnically suitable for construction and operation of the Project. North Plains will design structure footings in a manner to withstand and not exacerbate landslide activity.

6.8.2.2 Oil and Gas Production

The Project Corridor is not within any active oil and gas wells. As a result, no specific avoidance or minimization measures are required.

6.8.2.3 Coal Mines

The Project is not anticipated to impact coal mining operations; therefore, no avoidance or minimization measures are required.

6.8.2.4 Mineral Materials Mining

While future mining will be precluded from the Project's right-of-way, the Project does not constitute a significant loss of mineral materials resources or availability given the narrow, linear nature of the Project, and the fact that there are no active mineral materials mines within the Project Corridor. In addition, to the extent that any mineral materials resources would become unavailable within the Project right-of-way, the Project will not substantially affect the long-term availability of construction materials in the region.

North Plains may use fill materials to construct and maintain the Morton County Converter Station and access roads, which may include aggregate materials such as gravel, sand, and clay. Where possible, North Plains plans to purchase these materials as needed locally.

6.8.2.5 Soils

North Plains will obtain coverage under the General Permit for Stormwater Discharges Associated with Construction Activity, which requires preparation of a SWPPP. North Plains will minimize vehicle tracking of soil from construction sites by implementing BMPs such as installing rock access pads or construction mats and reducing equipment and vehicle access to the construction workspace where practicable. North Plains will also employ fugitive dust control measures, such as applying water to unpaved access roads and workspaces, covering material stockpiles and equipment transporting dust-producing materials, and implementing erosion and sediment control BMPs.

As described in Section 5.8 of the CMRP, where grading extends below the topsoil layer, North Plains will separate topsoil and store it separately from subsoil (see Appendix G). During restoration, subsoil will be returned to its original horizon, followed by topsoil, as described in Section 5.12 of the CMRP. Following the completion of construction activities, temporary Project workspace will be restored in accordance with Sections 5.3, 5.12 and 6 of the CMRP, which includes decompaction, return of previously segregated topsoil (where applicable), and temporary stabilization and seeding, as necessary based on site-specific conditions. Unless otherwise approved by the Commission, topsoil segregation will occur before topsoil freezes to the point that frost inhibits proper soil segregation.

6.9 WATER RESOURCES

6.9.1 Description of Resources

6.9.1.1 Surface Water

Wetlands

Wetlands are defined by the U.S. Army Corps of Engineers (USACE) and EPA as, “areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and bottomlands,” (EPA, 2023b). The USACE regulates dredge and fill in wetlands that are determined to be waters of the United States under Section 404 of the Clean Water Act (CWA). Wetlands in North Dakota are largely regulated under the USACE program, while the NDDEQ has jurisdiction over activities that may affect water quality in wetlands under Section 401 of the CWA.

For purposes of Section 404 permitting, North Plains is working with the USACE and anticipates requesting a preliminary jurisdictional determination and submitting a Pre-Construction Notification (PCN) according to the USACE Omaha District regional requirements for Nationwide Permit (NWP) 57. Additionally, North Plains is avoiding or minimizing impacts to all wetland and surface water resources where possible, regardless of jurisdiction.

North Plains completed wetland delineations from 2022 to 2025 within the Project Corridor and additional workspaces during the field survey seasons to support Project permitting. Additional surveys will occur in 2026 to cover areas where the Project workspace has shifted for updated

design, to avoid sensitive resources identified in previous years' surveys, and/or to accommodate landowner requests. Wetland delineations were conducted following Great Plains Regional Supplement to the Army Corps Wetland Delineation Manual (USACE, 2010). The USFWS National Wetlands Inventory was used to identify potential surface waters within the survey area (USFWS, 2025b); this data served as a precursor for field wetland delineations.

Wetlands delineated by the Project in support of Project permitting are shown on Figure A-6 in Appendix A. The Aquatic Resources Inventory Report is provided in Appendix I-2. Within the Project Corridor, palustrine emergent wetlands are the most common, totaling 154.4 acres, followed by palustrine scrub-shrub wetlands at 0.7 acre and palustrine forested wetlands at less than 0.1 acre.

Waterbodies

The surficial extent of a waterbody is based on presence of an ordinary high-water mark (OHWM). The USACE defines the OHWM and, therefore, the extent of waterbodies according to Title 33 of the CFR Part 328.3(e) as the "…line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris." North Plains' evaluation of waterbodies includes both flowing waterbodies and non-flowing waterbodies. Flowing waterbodies are classified by their flow regime, including perennial, intermittent, and ephemeral waterbodies. Perennial waterbodies retain water flow year-round during typical years. Intermittent waterbodies flow seasonally and may dry up during seasonally dry periods. Ephemeral waterbodies flow only because of direct runoff from precipitation events. The USACE has regulatory jurisdiction over waterbodies that are determined to be Waters of the United States under Section 404 of the CWA and navigable waterbodies under Section 10 of the Rivers and Harbors Act. Impacts to surface waterbodies that are jurisdictional Waters of the United States require a permit from the USACE.

North Plains completed water resources delineations within the Project Corridor and additional workspaces from 2022 to 2025 during the field survey seasons to support Project permitting. Waterbodies are identified by the presence of an OHWM as outlined in the USACE Regulatory Guidance Letter 05-50 (2005). This method includes identification of the limits of waterbodies based on physical characteristics, such as a defined bed and bank, scouring, change in vegetation, and evidence of flow (USACE, 2005). The USGS National Hydrography Dataset was used to identify potential surface waters within the survey area (USGS, 2025) and served as a precursor for field waterbody delineations. The Project Route does not cross designated or registered national wild, scenic, or recreational rivers.

Waterbodies delineated by the Project in support of Project permitting are shown on Figure A-6 in Appendix A. The Aquatic Resources Inventory Report is provided in Appendix I-2. Within the Project Corridor, there are 14 ephemeral, 17 intermittent, and 31 perennial streams or rivers and 32 lakes or ponds.

Navigable Waters

The Project Route does not cross waterbodies designated as Section 10 navigable waters under the Rivers and Harbors Act. However, it crosses state navigable waters.

In North Dakota, state navigable waters refer to any waters that were navigable at the time of statehood, meaning they were used or susceptible to being used as highways for commerce, allowing trade and travel in customary modes on water (NDAC 89-10-01-03).

According to the NDDWR, the following waterbodies have been determined to be navigable by the State Engineer under the federal standard of the Equal Footing Doctrine and are therefore sovereign to North Dakota: Bois De Sioux, Cannonball River, Devils Lake, Heart River, James River, Knife River, Lake Metigoshe, Long Lake (Bottineau County), Mouse River, Painted Woods Lake, Pembina River, Red River of the North, Sheyenne River, Sweetwater Lake, Upper Des Lacs Lake, and Yellowstone River (NDDWR, 2015).

The Project will cross both the Heart River and the Cannonball River. The Oliver Transmission Line will cross the Heart River southwest of Mandan approximately 0.3 miles south of the intersection of Lyons Road North and the BNSF Railway, as shown on pages 89 and 90 of Figure A-6 in Appendix A. The HVDC Transmission Line will cross the Cannonball River at multiple locations between approximately 7.0 and 7.2 miles east of Amidon, as shown on pages 23 and 24 of Figure A-6 in Appendix A, and approximately 4.4 miles southeast of New England, as shown on page 34 of Figure A-6 in Appendix A.

The Heart and Cannonball Rivers are tributaries of the Missouri River. Both rivers originate in southwestern North Dakota within the Little Missouri National Grassland and flow generally eastward, serving as significant waterways in the state.

Scenic River

The Project Route does not cross any designated or registered national scenic rivers. However, the Project does cross a designated State Scenic River.

The HVDC Transmission Line will cross the Little Missouri River, North Dakota's only designated State Scenic River, approximately 1.25 miles south of the low-water crossings VVV (Three V) Crossing in Slope County. The Little Missouri River State Scenic River Act, codified in NDCC Chapter 61-29, mandates that the river be preserved as nearly as possible in its present state, ensuring it remains free-flowing and in a natural condition. The Little Missouri River is classified as an avoidance area, designated or registered state scenic river, under NDAC 69-06-08-02(2)(b).

The Little Missouri River in North Dakota stretches approximately 116 miles north-south from the southwest corner of the state to the North Unit of the Theodore Roosevelt National Park. From there, it extends approximately 30 miles east-west to Highway 22. The river flows through several counties, including Bowman, Slope, Golden Valley, Billings, McKenzie, and Dunn, before draining into Lake Sakakawea. The Project crossing of the Little Missouri River is shown on page 6 of Figure A-6 in Appendix A.

6.9.1.2 Groundwater

Aquifers

The state has two primary types of aquifers: surficial and bedrock. Surficial aquifers, such as glacial-drift aquifers, are located near the earth's surface, while bedrock aquifers are found deeper within rock formations. Surficial aquifers tend to have the greatest potential for yielding significant quantities of water for municipal, industrial, and agricultural uses. Within the Study Area, major surficial aquifers include the glacial-drift aquifers of the Heart River, Little Heart River, and Elm Creek (NDDWR, 2025). These aquifers are considered sources for supplying water to municipalities, industries, and agricultural operations.

The EPA defines a sole source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in its service area and in which the area has no other reasonably

available alternative drinking water sources should the aquifer become contaminated. The Safe Drinking Water Act (SDWA) of 1974 authorizes the EPA to designate sole source aquifers and establish review areas. Within the Study Area there are no sole source aquifers (EPA, 2025a).

Wellhead Protection Areas

Amendments to the SDWA in 1986 created the Wellhead Protection Program, mandating states establish Wellhead Protection Areas to protect underground sources of drinking water. The EPA administers the SDWA. Section 1428 the of the SDWA defines a Wellhead Protection Area as, "a surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield." The size and extent of a Wellhead Protection Area is based on an evaluation of geology and hydraulics. The size can also depend on the type of public water supply well the Wellhead Protection Area is protecting.

Primary objectives of the Source Water Protection Program in North Dakota are to, "prevent contamination of public water supplies, encourage the placement of certain activities in areas less likely to contaminate public water supplies," and "raise public awareness of water resources used for public water supplies" (NDDEQ, 2025b). Within the Study Area, there are no Source Water Protection Areas.

Water Wells

North Plains reviewed publicly available data on water wells from the North Dakota Department of Water Resources (NDDWR, 2025). North Plains identified 20 water well records within the Study Area and 1 water well record within the Project Corridor. These records provide details about the drilling and construction of the wells, including well depth, diameter, static water level (if present), and a well log describing the encountered soil horizons. Not all wells are active. Some of the wells may have been plugged for various reasons such as a lack of water. The wells can serve a variety of purposes, including domestic, stock, irrigation, monitoring, and testing. Due to the age of some records, some well geolocations may be inaccurate, and others may not have been recorded.

6.9.1.3 Floodplains

The Federal Emergency Management Agency (FEMA) develops and maintains the National Flood Hazard Layer, a map layer derived from available Flood Insurance Rate Map data. North Plains used this resource to identify floodplains within the Project Corridor. The Project Corridor crosses identified 100-year floodplains at 15 locations. Figure A-6 in Appendix A depicts the 100-year floodplains within the Project Corridor (FEMA, 2025).

Regulatory floodways are areas adjacent to river or other waterbody channels designated to carry floodwaters during base flood events. The FEMA National Flood Hazard Layer also depicts regulatory floodways in the map layer (FEMA, 2025). The regulatory floodway adjacent to the Heart River is within the Study Area but is not crossed by the Project Corridor or Project Route (see page 89 of Figure A-6 in Appendix A).

6.9.2 Avoidance and/or Minimization

6.9.2.1 Surface Waters

Wetlands

The Project has been designed to avoid impacts to wetlands to the extent practicable. Across the Project workspace, North Plains anticipates approximately 0.1 acre of permanent wetland impacts, and 9.1 acres of temporary wetland impacts will occur. These impacts are associated with various Project activities necessary to construct or operate the Project, including but not limited to overland travel, pulling and tensioning sites, new temporary or permanent access roads, and existing road improvements. Where impacts to USACE-jurisdictional wetlands are unavoidable, North Plains will file a PCN with the USACE for a NWP and comply with applicable permit requirements. A detailed description of the wetland types documented during surveys is provided in the Aquatic Resources Inventory Report in Appendix I-2.

North Plains will use existing roads and disturbed two-tracks to access the Project workspace, where available. Where access roads are not available and new access roads are required, North Plains has sited these roads to minimize impacts to wetlands while evaluating other constructability constraints and the overall length and additional disturbance footprint of the access road.

North Plains will clear vegetation within wetlands at or slightly above the ground surface, allowing root stock to remain intact as described in Section 5.4 of the CMRP. North Plains will not typically grub stumps or roots to minimize soil impacts and erosion potential; however, stump removal may be necessary in some locations within the Project workspace and access roads to facilitate the movement of construction vehicles, where excavation will occur, or when reasonably requested by the landowner. North Plains will access wetlands as described in Section 5.3.2 of the CMRP to minimize rutting and soil compaction. Following construction, North Plains will restore wetlands in accordance with Section 6 of the CMRP; North Plains will seed wetlands as outlined in Section 6.6.2 of the CMRP. North Plains will comply with reseeding requirements specified in permits or according to land management agency requirements.

Heavy equipment travelling along the Project workspace can cause soil compaction and rutting. Rutting can cause mixing of topsoil and subsoil, which impacts soil fertility. Compacted soils can inhibit seed germination and reduce vegetation productivity. Where soils are saturated and construction equipment cannot pass through a wetland without potential rutting, North Plains will temporarily place construction mats along the access road to minimize rutting, compaction, and mixing of soils as discussed in Section 5.3.2 of the CMRP. In the rare event that workspace for a structure is required in a wetland, North Plains will include construction matting where possible to minimize temporary impacts to the wetland. If grading or excavation in a wetland must occur, North Plains will separate the topsoil and replace it during regrading and restoration to maintain the topsoil and the native wetland vegetation seedbank, facilitating reestablishment of wetland vegetation, as described in Section 5.8.1 of the CMRP.

Ground disturbance at structure workspaces and for structure foundation installation, as well as minor ground disturbance in uplands along access roads and overland travel lanes, have the potential to contribute sediment downslope into wetlands. North Plains will implement the measures outlined in Sections 5.7 and 6.3 of the CMRP to minimize potential for sedimentation in wetlands. North Plains will also comply with the North Dakota Pollutant Discharge Elimination

System Stormwater Construction General Permit requirements and will maintain temporary erosion and sediment control BMPs until final stabilization or permanent cover is achieved.

Waterbodies

The Project has been designed to avoid waterbodies to the extent practicable. The Project workspace will cross approximately 10 perennial waterbodies, 10 intermittent waterbodies, 8 ephemeral waterbodies and 2 lakes or ponds, not including 2 perennial waterbody crossings along existing roads, where impacts are not anticipated. These impacts are primarily associated with Project access roads. Where impacts to USACE-jurisdictional waterbodies are unavoidable, North Plains will file a PCN with the USACE for a NWP and comply with applicable permit requirements. A detailed description of the waterbody types documented during surveys is provided in the Aquatic Resources Inventory Report in Appendix I-2.

North Plains will set back transmission structures and their associated workspaces to avoid waterbodies by a minimum of 10 feet from the OHWM of surface waterbodies, where practicable.

To minimize impacts to waterbodies from access road construction, North Plains will install culverts and build bridges to maintain flows within waterbodies in accordance with federal, state, and local permitting requirements, and federal and state land-managing agency specifications, otherwise, coordinated with the applicable agency. North Plains may also install low-water crossings on streams with low velocity or no flow.

North Plains will leave some new or upgraded crossings in place for use during operations. Permanent waterbody crossings will require impacts on surface waterbodies to allow necessary access to Project facilities during operations. North Plains will acquire necessary permits from the USACE. Installation of permanent waterbody crossings will comply with permit requirements for these planned impacts and North Plains will implement measures outlined in the CMRP to minimize impacts on waterbodies.

Sections 5.7 and 6.3 of the CMRP describe the temporary and permanent erosion and sediment control BMPs that North Plains will implement during construction to protect waterbodies. North Plains will prepare a SWPPP in accordance with the Stormwater Construction General Permits administered by the NDDEQ. Installing erosion and sediment control BMPs, implementing the measures outlined in the CMRP, and compliance with permits will minimize surface water runoff and, thereby, minimize sediment from reaching waterbodies crossed or adjacent to the Project workspace.

Navigable Waters

The Project Route crosses two state navigable waters, the Heart and Cannonball Rivers. The Project has been designed to span both rivers and transmission structures have been sited to avoid placement within the rivers. No travel through the rivers will occur during construction or operation of the Project. At the river crossing locations, the Project will be designed to protect the public's right to navigation, recreation, fishing, and other water-related activities. Measures will be implemented to avoid disruptions to irrigation, industrial use, and other essential water supplies, ensuring the continued availability and quality of these resources. Where the Project crosses the Heart River, the transmission line also parallels the existing Fort Thompson–Leland Olds 345-kV transmission line.

North Plains will submit sovereign lands permits to the NDDWR for the Project's crossing of the Heart River and Cannonball River. Details regarding North Plains' coordination with the NDDWR and navigable waters is discussed in Section 7.2.7.

Scenic River

Due to the Project's interconnection points and the geographic location of the Little Missouri River, which starts in the southwest corner of North Dakota and flows north, then east to Lake Sakakawea, there is no reasonable alternative but to cross the river.

The HVDC Transmission Line will not affect the free-flowing nature of the Little Missouri River, which is designated as a State Scenic River. The transmission line will span the river and be placed beyond the OHWM. There is no digital data for FEMA Flood Insurance Rate Maps (FIRM) at the river crossing (FEMA, 2025). No travel through the river will occur during construction or operation of the Project. No impoundment, diversion, straightening, or other modifications to the river are planned as part of the Project. The Project design and construction activities will ensure that the river remains in its natural condition, consistent with the requirements of the Little Missouri River State Scenic River Act (NDCC Chapter 61-29).

To further minimize impacts, North Plains will implement BMPs outlined in the CMRP. These measures will help preserve the integrity of the river and its surrounding environment throughout the Project.

North Plains met with the Little Missouri Scenic River Commission (LMSRC) during the annual meeting. The LMSRC did not have any questions or concerns related to the Little Missouri River crossing. Further details regarding North Plains' coordination with the LMSRC are discussed in Section 7.2.18.

6.9.2.2 Groundwater

Aquifers

Inadvertent spills or leaks of petroleum-based liquids during refueling, equipment operation or maintenance, or storage during Project construction have potential to impact groundwater. Drilling or excavation of foundations could result in introducing materials from the surface to contact groundwater during foundation excavation if structure foundations extend below the water table. Small amounts of petroleum-based substances, primarily in the form of fuels and lubricants, will also be present in equipment or storage containers at construction sites and material storage yards. Contaminants could leak or spill and enter groundwater recharge areas, where the contamination could reach groundwater.

North Plains will implement the mitigation measures outlined in its Spill Prevention and Response Plan and Hazardous Materials and Waste Management Plan (see Attachment J and Attachment E, respectively, of the CMRP) to minimize potential impacts on groundwater. North Plains will prohibit storage of hazardous materials, chemicals, fuels, lubricating oils, and other petroleum products in the vicinity of identified active private water wells and identified public or municipal water wells, in accordance with the CMRP. If refueling or use of other hazardous liquids must occur within the specified setback areas, North Plains will monitor the activity and will have spill response equipment onsite and readily available. Should a spill occur, North Plains will notify the appropriate agency and/or emergency response authorities.

North Plains will require water for dust control and batching of concrete for the transmission line structure foundations. North Plains estimates that approximately 4.2 million gallons of water will be needed for concrete batching and approximately 164,000 gallons of water per mile for access road dust control based on the anticipated construction duration. North Plains intends to acquire water from local sources for these purposes. Project water needs that are acquired from surface waters will be supplied by water rights holders by water agreement. There would be no net impact on water use given that North Plains will make agreements with existing water rights holders.

Wellhead Protection Areas

The Project will not affect any Source Water Protection Areas, and no avoidance or minimization measures will be required.

Water Wells

Because water well logs can be geospatially imprecise and documentation incomplete, North Plains will consult with landowners to determine if there are water wells within 150 feet of the Project workspace. Prior to construction, North Plains will coordinate with landowners to identify water wells that may require setbacks during construction; measures outlined in the CMRP (see Appendix G) will be implemented to minimize impacts to water wells. To further avoid and minimize potential impacts to wells, North Plains will maintain a minimum 10-foot disturbance setback from existing water wells. Avoidance and minimization measures for water supply are further discussed in Section 6.2.2.4.

6.9.2.3 Floodplains

The Project has been designed to avoid permanent impacts to floodplains, with the exception of the Heart River crossing in Morton County. At this location, the 100-year floodplain is approximately half a mile wide, exceeding the typical 1,200-foot span, and as such structure placement within the floodplain could not be avoided. The Project workspace has been optimized to reduce permanent floodplain impacts and minimize both the number of structures and the size of temporary structure workspaces within floodplains; currently only three structures would be located within the Heart River floodplain. The Project Corridor avoids regulatory floodways.

Permanent impacts within the 100-year floodplain will be less than 0.1 acre for the three structures at one floodplain (Heart River). Temporary impacts, including structure workspaces and guard structures, will be approximately 4.3 acres within the 100-year floodplain at five locations.

North Plains has coordinated with Morton County officials regarding the proposed floodplain impacts and will obtain any floodplain permits that may be required. There are no permanent impacts to 100-year floodplains in Golden Valley, Slope, Hettinger, Grant, or Oliver counties. Therefore, floodplain permits are not needed from those counties.

6.10 VEGETATION RESOURCES

6.10.1 Description of Resources

This section describes the vegetation resources within the Study Area and Project Corridor. North Plains compiled the information presented here through a combination of publicly available spatial datasets and Project-specific biological field survey data. In 2022, 2023, 2024, and 2025, North Plains conducted field surveys to characterize existing conditions and identify biological

resources, including wetlands, waterbodies, and occurrences of invasive and noxious weeds that may be present along the Project Corridor. Additional surveys will occur in 2026 to cover areas where the Project workspace has shifted for updated design, to avoid sensitive resources identified in previous years' surveys, and/or to accommodate landowner requests.

The Study Area is located entirely within the Northwestern Great Plains Level III Ecoregion, as classified by the EPA hierarchical system of nested ecoregions, which groups areas with similar geology, physiography, vegetation, climate, soil, wildlife, and hydrology (EPA, 2023a). Native grasslands can be found within this ecoregion, especially in areas of steep or broken topography. The Project crosses three Level IV ecoregions within the Northwestern Great Plains Level III Ecoregion, including the River Breaks, Little Missouri Badlands, and Missouri Plateau.

The River Breaks ecoregion features broken terraces and uplands descending to the Missouri River and its major tributaries, shaped by soft, easily erodible strata such as Pierre shale (Woods et al., 2002). Riparian gallery forests of cottonwood and green ash thrive along the tributaries; however, these forests have largely been eliminated along the Missouri River due to impoundments. The Little Missouri Badlands ecoregion presents a rugged erosional landscape where Rocky Mountain juniper is common on the hillslopes, and cottonwood and green ash populate the riparian areas. Ephemeral and flashy stream flows create steep, down-cut channels in the soft sediments along the tributaries to the Little Missouri River. Grazing and recreation are the dominant land uses in this region. The Missouri Plateau features expansive landscapes that remain largely unaffected by glaciation, preserving original soils and a complex stream drainage pattern. This ecoregion is characterized by a mosaic of spring wheat, alfalfa, and grazing land.

North Dakota is divided into six geological regions: Missouri Slope, Badlands, Missouri Coteau, Turtle Mountains, Drift Prairie, and Red River Valley. These regions are defined by their landforms, geology, and topography. The Study Area lies within the Badlands and Missouri Slope, which are characterized by rolling terrain, eroded formations, and mixed-grass and short-grass prairies. The climate, soil composition, and land use history of these regions have shaped the plant communities found within them.

Vegetation cover was evaluated using the publicly available NLCD and combining NLCD land cover classes into categories to reflect similar vegetative cover types. The majority of vegetation in the Project Corridor is herbaceous grassland, followed by agricultural land, other (developed areas and open water), shrubland, and forest and woodland (see Table 6.10.1-1).

TABLE 6.10.1-1

Vegetation Types within the Project Corridor

Vegetation Type	Project Corridor (acres)
Herbaceous Grassland [a]	5,679.0 [b]
Agricultural [c]	3,205.9
Other [d]	519.0
Shrubland	409.9
Forest and Woodland [e]	36.1
PROJECT TOTAL	9,849.9

TABLE 6.10.1-1

Vegetation Types within the Project Corridor

Vegetation Type	Project Corridor (acres)

[a] Includes herbaceous land covers, barren lands, hay/pasture, and non-forested wetlands.
[b] Approximately 51 percent (2,884.1 acres) of the herbaceous grassland vegetation type in the Project Corridor is considered potentially undisturbed (Prairie Pothole Joint Venture, 2019).
[c] Includes cultivated crops.
[d] Includes developed areas and open water.
[e] Includes forested land covers and conservatively includes other land cover types with potential tree components, such as woody wetlands.
Source: Multi-Resolution Land Characteristics Consortium. 2024b. Annual National Land Cover Database (NLCD): Annual NLCD Collection 1.0: 2023 Land Cover of Conus. U.S. Geological Survey, Sioux Falls, South Dakota. Released October 2024. doi: 10.5066/P94UXNTS. Available online at: https://www.sciencebase.gov/catalog/item/655ceb8ad34ee4b6e05cc51a.

6.10.1.1 Grassland

The predominant grassland vegetation type in the Study Area and Project Corridor is mixed-grass prairie, recognized as one of the most floristically diverse grassland types (Sims and Risser, 2000). Mixed-grass prairies support a variety of grasses, sedges, forbs, and low-growing shrubs. Shorter grasses, such as blue grama (*Bouteloua gracilis*) and buffalograss (*Buchloe dactyloides*), thrive in drier upland areas or heavily grazed sites, while taller species like big bluestem (*Andropogon gerardii*) and western wheatgrass (*Pascopyrum smithii*) are more common in valleys, ravines, and areas with higher moisture (Sims and Risser, 2000). Cool-season grasses, which germinate and flower earlier in the growing season, contribute more biomass to the vegetative community than warm-season grasses, although both types are present.

Common forb species include pussytoes (*Antennaria neglecta*), purple coneflower (*Echinacea angustifolia*), yarrow (*Achillea millefolium*), Indian breadroot (*Pediomelum spp.*), sagewort (*Artemisia spp*.), and goldenrod (*Solidago spp*.) (Sims and Risser, 2000; NDGFD, 2019c).

Native mixed-grass prairies, the primary grassland type in the Study Area, have been reduced to just 2 percent of their original extent in North America due to agricultural and urban development (National Park Service [NPS], 2020). Native grasslands persist in rangeland patches, particularly in areas with steep slopes where row crop agriculture is challenging. Despite this decline, grasslands continue to provide benefits such as wildlife habitat, livestock forage, recreational space, and climate regulation (Bengtsson et al., 2019; Lemaire et al., 2011).

Potentially undisturbed grasslands in North America, often referred to as unbroken grasslands, were mapped using Prairie Pothole Joint Venture (PPJV) data.[3] These grasslands have not been impacted by development or agricultural row crop use. While unbroken grasslands are more likely to retain native prairie grasses and forbs and provide valuable habitat for native plants and wildlife, their floristic quality can vary. Land use practices such as cattle grazing, haying, and prescribed burning do not preclude a grassland from being classified as unbroken in the PPJV data. Based on PPJV data, the Project Corridor contains approximately 2,884.1 acres of potentially unbroken

[3] The PPJV's potentially undisturbed grassland layer (2019) was developed using a supervised land cover classification of 10-meter Sentinel-2 imagery and a Multi-scale Topographic Index raster to classify land cover and various additional datasets to iteratively remove non-grasslands and grasslands with evidence of disturbance from the resulting layer. Datasets used in the analysis included NLCD, USDA Farm Service Agency Common Land Unit time-series data, USGS high resolution National Hydrologic Database data, and TIGER/Line transportation data.

grassland (PPJV, 2019); this equates to approximately 29 percent of the Project Corridor (see Table 6.10.1-1).

As discussed in Section 6.11, none of the potentially unbroken grasslands crossed by the Project provide designated or proposed critical habitats for federally listed species.

6.10.1.2 Wooded Areas

Based on available vegetation cover data (see Table 6.10.1-1), the Project Corridor contains approximately 409.9 acres of shrub communities and 36.1 acres of forest communities. See Figure A-6 in Appendix A for the distribution of wooded areas within the Project Corridor.

6.10.2 Avoidance and/or Minimization

6.10.2.1 Grassland

North Plains has avoided potentially unbroken grassland to the extent practicable. Project design changes were implemented in North Dakota to avoid and minimize impacts on potentially unbroken grasslands in consideration of state conservation priorities and to minimize impacts to special status species (see Section 6.11). Minimization and avoidance measures applied during Project design included siting access roads outside of potentially unbroken grassland, using overland travel where possible, moving structures, using a smaller construction footprint for structures, and/or applying matting to prevent ground disturbance in temporary workspaces.

The ecological quality of the potentially unbroken grasslands within the Project footprint is variable, ranging from low-quality areas dominated by invasive species to high-quality native grasslands.

Based on PPJV data (2019), permanent loss of 13.2 acres of potentially unbroken grasslands would occur in areas with permanent infrastructure, including structure footprints (1.6 acres) and existing roads needing improvement (11.6 acres). This equates to approximately 0.1 percent of the Project Corridor within North Dakota.

Construction activities within the Project workspace will temporarily impact approximately 792.9 acres of potentially unbroken grassland or 8 percent of the Project Corridor. This includes up to 583.6 acres within temporary workspaces such as structure pads, wire pulling and tensioning sites, and new temporary roads, where ground-disturbing activities such as grading may occur. Temporary ground-disturbing construction activities would result in the permanent conversion of potentially unbroken grasslands to broken grasslands, where present. Within the remaining 209.3 acres of temporary disturbance, North Plains would use overland travel roads and apply timber matting during construction to avoid ground-disturbing activities and retain unbroken grasslands, limiting potential temporary impacts in those areas to crushed vegetation and minor soil disturbances such as rutting. Additionally, ground disturbance within temporary workspaces such as wire pulling and tensioning areas will be limited to locations where grading or similar activities are necessary to provide a safe and level work surface.

Potentially unbroken grasslands within temporary construction workspaces will be reseeded to restore herbaceous grassland cover and managed for noxious weeds as outlined below and described in the CMRP. These restoration activities may improve the grassland quality and floristic diversity in areas previously dominated by noxious weeds.

To minimize impacts where clearing is needed, North Plains will cut vegetation at or slightly above the ground surface. As described in Section 5.8 of the CMRP, where grading extends below the topsoil layer, North Plains will separate topsoil and store it separately from subsoil (see Appendix G). During restoration, subsoil will be returned to its original horizon, followed by topsoil, as described in Section 6.2 of the CMRP. Preserving and restoring the topsoil will help retain the local seedbank for revegetation, along with more nutrient rich soil for plant growth. These measures will help reduce the severity and duration of temporary construction impacts.

Restoration activities to reestablish vegetation will follow applicable permit or easement conditions and Section 6 of the CMRP. Restoration will use pollinator-friendly and weed-free seed mixes that include native plants with a high forb-to-grass ratio, identified in coordination with the Natural Resources Conservation Service (NRCS) and state and federal land-managing agencies, where applicable. On private lands, North Plains will use a native prairie seed mix in areas with unbroken grasslands. Timely restoration of the Project workspace, reseeding with the appropriate seed mixes, and the use of effective erosion and sediment control BMPs will minimize the intensity and duration of vegetation disturbance. North Plains will implement federal and state land-managing agency seeding requirements, as described in the CMRP.

North Plains will implement measures described within the Invasive and Noxious Species Management Plan to manage noxious weeds during Project construction (see Attachment F of the CMRP in Appendix G). The Invasive and Noxious Species Management Plan requires that contractors thoroughly clean construction equipment prior to entering workspaces to limit the potential spread of noxious weeds. Prior to construction, contractors will mark areas with existing noxious weed infestations in the field and on alignment sheets to clearly indicate the limits of infestation within the construction area. Contractors will pretreat noxious weed infestations with herbicides or mechanical means (e.g., mowing), as appropriate, prior to the onset of construction. North Plains will implement BMPs in the use of herbicides to reduce potential impacts to other plant, avian, or wildlife species, including special status species, as applicable. In addition, the Invasive and Noxious Species Management Plan and CMRP require that only weed-free erosion control materials be used.

Native grasslands are vulnerable to encroachment by invasive species, which can outcompete native species and alter growing conditions. In the absence of invasive species, and with appropriate erosion and sediment control BMPs, native grassland would reestablish within a few years, although areas with ground disturbance would no longer be recognized as unbroken grassland. Invasive weed management will be important to avoid or minimize grassland degradation, particularly where soil has been disturbed. In addition, installation of erosion and sediment control BMPs and carefully preserving topsoil and the native plant seedbank promotes native grassland to reestablish in these areas.

6.10.2.2 Wooded Areas

Tree clearing will be necessary to maintain adequate clearance beneath the transmission line and ensure safe operation and reliability. North Plains will remove trees and tall-growing shrub species within the right-of-way, along with other trees and woody vegetation in the Project workspace. If removal is necessary, North Plains will comply with the Commission's Tree and Shrub Mitigation Specifications. New tree plantings will be located outside the Project right-of-way. North Plains requests a modification to the Commission's Tree and Shrub Mitigation Specifications, which limits clearance to up to 50 feet in width. Specifically, North Plains requests clearance of up to 250 feet, in width, within the Project workspace and right-of-way to accommodate construction, structure placement, and clearing within the right-of-way.

Based on NLCD, construction activities will temporarily affect approximately 0.5 acres of forest and woodland areas within temporary Project workspaces outside the right-of-way, while construction and operational maintenance activities will result in approximately 23.6 acres of permanent forest removal within the right-of-way (Multi-Resolution Land Characteristics Consortium, 2024b). The permanently impacted wooded areas within the right-of-way will be maintained as non-treed areas for the duration of the Project for safety reasons and to prevent vegetation-related outages. Details on the BMPs to be employed during vegetation clearing in forested areas are provided in Section 5.4 of the CMRP.

To minimize soil disturbance and erosion, North Plains will generally avoid grubbing stumps or roots, though some stumps may need to be removed to facilitate construction vehicle movement or at the reasonable request of landowners. Temporary erosion and sediment control BMPs will be installed to further reduce erosion and sedimentation risks. This may include distributing lop and scatter of woody material within the right-of-way on steep, previously forested slopes to minimize erosion until final stabilization or permanent cover is established, as detailed in Section 5.7 of the CMRP. Following these methods, North Plains will minimize potential impacts to trees/shrubs. For unavoidable impacts, the Project will comply with the Commission's Tree and Shrub Mitigation Specifications.

6.11 Wildlife and Special Status Species Resources

6.11.1 Description of Resources

The species discussed in this section were identified through coordination with the NDGFD and USFWS as species of concern for the Project and were therefore included in survey efforts and study. This section includes a discussion on federally listed, proposed, and under-review species; USFS sensitive species; migratory birds; raptors and eagles; and prairie grouse. Some species discussed in this section are also species classified as Species of Greatest Conservation Need (formally referred to as Species of Conservation Priority) in North Dakota's State Wildlife Action Plan (NDGFD, 2025c). Other species classified as Species of Greatest Conservation Need are not discussed further in this Application.

Review of the Project Corridor did not identify areas considered critical to the life stages of threatened or endangered animal or plant species, as outlined in NDAC 69-06-08-02(1)(d), or areas where species unique or rare to North Dakota would be irreversibly damaged, as described in NDAC 69-06-08-02(1)(e).

Field surveys and desktop studies were conducted to assess wildlife, habitat, and ecological conditions in support of the Project. From 2022 to 2025, North Plains conducted field surveys to evaluate existing conditions and identify biological resources within the Project Corridor, Project workspace, and/or species-specific survey area. Ongoing surveys will be completed in 2026 or prior to construction. A full list of field surveys and assessments conducted in support of the Project is provided in Table 6.11.1-1.

TABLE 6.11.1-1

Field Surveys and Assessments Conducted in Support of the Project

Survey Type	Survey Method	Location	Survey Area [a]	Current Survey Status and Survey Years in North Dakota	Commission Survey Report or Section in Application
BIOLOGICAL SURVEYS					
HABITAT MAPPING AND ASSESSMENT					

TABLE 6.11.1-1

Field Surveys and Assessments Conducted in Support of the Project

Survey Type	Survey Method	Location	Survey Area [a]	Current Survey Status and Survey Years in North Dakota	Commission Survey Report or Section in Application
Aquatic resource surveys	Ground	Project-wide	Typical Survey Area	Ongoing, 2022-2026	2022-2025 Aquatic Resource Inventory Survey Report, Appendix I-2
General habitat mapping	Ground	Project-wide	Typical Survey Area	Ongoing, 2022-2026	Section 6.11
Noxious weed surveys	Ground	Project-wide	Typical Survey Area	Ongoing, 2022-2026	Section 6.10
Black-tailed prairie dog colony mapping	Ground	Project-wide	Typical Survey Area	Ongoing, 2022-2026	Section 6.11
Northern long-eared bat habitat assessment	Ground	Project-wide	Typical Survey Area	Complete, 2022-2023	2023-2025 Bat Survey Report, Appendix I-3
Non-forested bat habitat assessment	Ground	Project-wide	Typical Survey Area	Ongoing, 2022-2026	2023-2025 Bat Survey Report, Appendix I-3
Preliminary Dakota skipper habitat assessment	Ground	Project-wide	Typical Survey Area, plus 1,000 ft buffer on LMNG	Complete, 2022-2024	2023-2025 Dakota Skipper Habitat Assessment Survey Report, Appendix I-4
Dakota skipper reproductive and foraging habitat assessment	Ground	Project-wide	Typical Survey Area	Ongoing, 2023-2026	2023-2025 Dakota Skipper Habitat Assessment Survey Report, Appendix I-4
SPECIES OCCUPANCY SURVEYS					
Dakota skipper presence/ probable absence surveys	Ground	Selected areas (highest quality habitat along Project)	Typical Survey Area	Complete, 2024-2025	2024-2025 Dakota Skipper Occupancy Survey Report, Appendix I-5
USFS Plant Surveys	Ground	LMNG only	Typical Survey Area	Complete, 2022-2025	2022–2025 Botanical Survey Report for the Little Missouri National Grasslands, North Dakota, Appendix I-6
Acoustic presence/ probable absence bat surveys	Ground	Project-wide	Typical Survey Area [b]	Complete, 2023-2025	2023-2025 Bat Survey Report, Appendix I-3
Bat hibernacula assessment surveys	Ground	Potential hibernacula and steep slopes Project-wide	Typical Survey Area, plus 0.5-mile centerline buffer	Complete, 2023-2025	2023-2025 Bat Survey Report, Appendix I-3
Bat hibernacula presence/probable absence surveys	Ground	Suitable hibernacula	Typical Survey Area	Complete, 2025	2023-2025 Bat Survey Report, Appendix I-3
Mist-netting bat surveys (supplemental)	Ground	Selected areas (highest quality bat habitat along Project)	Typical Survey Area	Complete, 2023	2023-2025 Bat Survey Report, Appendix I-3
Incidental wildlife observations	Ground	Project-wide, USFS species on LMNG only	Coincident with other ground surveys [d]	Ongoing, 2022-2026	Section 6.11
Raptor nest surveys	Aerial	Project-wide	1- to 2-mile Project Route buffer [c]	Complete, 2022-2023	2022-2023 Raptor Nest Survey Report, Appendix I-7
Wading bird rookery surveys	Aerial	Project-wide	1- to 2-mile Project Route buffer [c]	Complete, 2022-2023	2022-2023 Raptor Nest Survey Report, Appendix I-7

TABLE 6.11.1-1

Field Surveys and Assessments Conducted in Support of the Project

Survey Type	Survey Method	Location	Survey Area [a]	Current Survey Status and Survey Years in North Dakota	Commission Survey Report or Section in Application
Greater sage-grouse and sharp-tailed grouse lek surveys	Aerial	Project-wide (2022)	2-mile Project Route buffer	Complete, 2022	2022 Greater Sage-Grouse and Sharp-tailed Grouse Lek Survey Report, Appendix I-8

[a] The Typical Survey Area includes: 300-foot-wide transmission line corridor, 50-foot-wide access road corridor, pulling and tensioning sites, laydown yards, facility footprints, and additional construction areas, as needed.

[b] Bat presence/probable absence acoustic surveys were conducted at selected points in suitable habitat within the Typical Survey Area.

[c] A 2-mile buffer was used in areas with high predicted golden eagle nest density.

[d] Incidental wildlife observations were recorded during wetland/waterbody and general habitat surveys but did not include a specific target area or separate mobilization.

6.11.1.1 Federally Listed, Proposed, and Under Review Species

The ESA protects plants and wildlife species that are listed as threatened or endangered. The ESA is jointly administered by the USFWS, which is responsible for terrestrial and freshwater species, and National Oceanic and Atmosphere Administration (NOAA) Fisheries, which is responsible for marine and anadromous species. Section 9 of the ESA prohibits take of listed wildlife, where the definition of "take" includes harassing, harming, or killing (16 U.S. Code (U.S.C.) 1532 [1973], 1538 [1973]). Some threatened wildlife species are regulated under an ESA 4(d) Rule that may except take following specified restrictions. Removing, maliciously damaging, or destroying any listed plant on federal land or on non-federal land in knowing violation of state law is also prohibited (16 U.S.C. 1538 [1973]).

An endangered species is a species that is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species that is likely to become endangered in the foreseeable future. Critical habitat for threatened or endangered species may be designated in areas occupied by the species at the time of listing, or in unoccupied areas determined essential for the species' conservation. No designated critical habitat occurs within the Study Area (see Table 6.11.1-2). The nearest designated critical habitat is located along the Missouri River, approximately 6.2 miles east of the closest point of the Project Corridor (USFWS, 2025a). In reviewing the Project, the DOE, as the lead federal agency, will consult or conference with USFWS in compliance with Section 7 to assess whether the Project could adversely affect any federally listed, proposed candidate, or under review terrestrial or freshwater species and designated or proposed critical habitat. The Project does not contain waterbodies that support species managed by the NOAA Fisheries. North Dakota does not have a state threatened or endangered species list; however, it recognizes those federally listed under the ESA.

North Plains coordinated with the USFWS and NDGFD throughout the Project planning and design process to confirm survey needs and protocols, and report on survey findings, as noted in Section 7.2.3. Based on agency coordination and a review of the USFWS IPaC system (USFWS, 2025a), two species are listed as endangered, three species are listed as threatened, one species is proposed for federal listing as endangered, two species are proposed for federal listing as threatened, and two species are currently under review for federal listing within the Study Area. Refer to Table 6.11.1-2 below for the full list of species and their ESA listing status designations. Each species is described in detail thereafter.

TABLE 6.11.1-2

Federally Listed, Proposed, and Under Review Species Identified via Agency Coordination and IPaC

Common Name (Scientific Name)	Listing Status	Critical Habitat [a]
BIRDS		
Piping plover (*Charadrius melodus*)	Threatened	Yes, Outside Study Area
Rufa red knot (*Calidris canutus rufa*)	Threatened	Yes, Outside Study Area
Whooping crane (*Grus americana*)	Endangered	Yes, Outside Study Area
INVERTEBRATES		
American bumble bee (*Bombus pensylvanicus*)	Under Review	Not Applicable
Dakota skipper (*Hesperia dacotae*)	Threatened	Yes, Outside Study Area
Monarch butterfly (*Danaus plexippus*)	Proposed Threatened	Proposed, Outside Study Area
Suckley's cuckoo bumble bee (*Bombus suckleyi*)	Proposed Endangered	None
Western regal fritillary (*Argynnis idalia occidentalis*)	Proposed Threatened	None
MAMMALS		
Little brown bat (*Myotis lucifugus*)	Under Review	Not Applicable
Northern long-eared bat (*Myotis septentrionalis*)	Endangered	None

[a] When a species is proposed for listing or uplisting under the ESA, USFWS considers whether designation of critical habitat is warranted. A value of "None" indicates that the need for critical habitat was evaluated for a species, and determined to be not necessary. A value of "Not Applicable" is used for under review species, where the need for federal listing or designation critical habitat under ESA is in review has not yet been determined.

Source: USFWS, 2025a

Little Brown Bat

The little brown bat (*Myotis lucifugus*) is currently under review for federal listing under the ESA due to population declines throughout its range caused by white-nose syndrome (60 Federal Register [FR] 57722 [November 17, 1995]; Cheng et al., 2021). The range of the little brown bat spans most of the United States and Canada, including North Dakota. Little brown bats hibernate in caves and abandoned mines during the winter and roost in forested habitat and manmade structures in the summer, migrating between the two habitats in the spring and fall (Thomas et al., 1979; Fenton and Barclay, 1980).

Little brown bats are most likely to use western and central North Dakota for migration and summer occupancy (April – October) (Gillam et al., 2021). Hibernacula have not been documented within North Dakota (NDGFD, 2025a) although acoustic detections during winter suggest that some individuals may hibernate in the caves and rock crevices of western North Dakota (Gillam et al., 2021). Maternity roosts are primarily in buildings but may occur under bridges and in snags in North Dakota (NDGFD, 2025a; Gillam et al., 2021).

Based on agency records, there are no known hibernacula within the Study Area; however, there may be undocumented caves, mines, or human-made structures that could be used as

hibernacula (USFWS, 2022a; NDGFD, 2025a). To identify new potential hibernacula, North Plains documented possible winter habitat including caves, portals, rocky outcrops, mineshafts, and abandoned buildings during general habitat mapping surveys between 2022 and 2025 (see Table 6.11.1-1). North Plains identified four potential hibernacula within the Study Area that merited additional field verification to determine suitability. After field assessments, one cave located south of the Project Corridor (approximately 190 feet from the closest Project workspace) in Grant County was determined to be a suitable hibernaculum (see Appendix I-3). Hibernacula occupancy surveys were completed at this hibernaculum between September 3 and 28, 2025, to confirm the presence or probable absence of bats in the cave. No little brown bats were captured and probable absence at this hibernaculum is assumed.

During roadside assessments in 2024, surveyors also identified seven steep rocky or talus slopes within the Study Area that may contain deep crevices or caves and may provide potential overwintering habitat. However, based on subsequent review, none of the identified features would be considered potential hibernacula, and no follow-up hibernacula assessments are planned in these areas (see Appendix I-3).

Summer roosting habitat is varied and may include forests in fragmented agricultural landscapes and suburban areas (Fenton and Barclay, 1980; Henderson et al., 2009); however, little brown bats avoid open agricultural areas and roads (Bergeson et al., 2013; Fenton and Bell, 1979). Roosts are generally located near foraging areas, such as waterbodies and forest edges (Bergeson et al., 2013; Fenton and Bell, 1979; NDGFD, 2025a). Suitable summer roosting and foraging habitats within the Project Corridor are limited due to the prevalence of grassland (see Table 6.10.1-1) and the distances between woodlands. North Plains conducted presence/probable absence acoustic surveys between June and August in 2023, 2024, and 2025. Surveys adhered to the current USFWS guidelines (USFWS, 2023f; USFWS, 2024d) at the time of survey, which recommended surveying one acoustic survey site per kilometer of suitable habitat (e.g., forested habitat). Following these guidelines, North Plains conducted surveys at 114 acoustic sites within the Study Area in North Dakota, including 82 sites in 2023, 30 sites in 2024, and 2 acoustic sites in 2025. Through qualitative analysis of the acoustic data, a qualified bat biologist confirmed little brown bat presence at 71 sites in Golden Valley, Slope, Grant, Hettinger, Morton, and Oliver counties. Additionally, during 2023 supplemental (elective) mist netting surveys at four sites in North Dakota, surveyors captured two little brown bats in Golden Valley County and one little brown bat in Morton County, North Dakota (see Appendix I-3).

Based on coordination with USFWS, North Plains has conservatively assumed that forests within three miles of a detection contain occupied little brown bat summer roosting habitat (USFWS, 2024a). The species could also use existing bridges within 0.25 mile of the Project workspace as summer roosting habitat.

Northern Long-eared Bat

The northern long-eared bat *(Myotis septentrionalis*) is listed as endangered with population declines heavily attributed to white-nose syndrome (USFWS, 2022a, 2024d). The northern long-eared bat is widespread but patchily distributed across the eastern and north central United States, rarely occurs in large numbers, and was historically less common in the southern and western portions of their range (Amelon and Burhans, 2006). The current known range includes all of North Dakota (USFWS, 2024a). Northern long-eared bats have been documented in riparian corridors along the Little Missouri River and Missouri River in North Dakota, which includes Golden Valley, Slope, Morton, and Oliver counties (NDGFD, 2019a).

Northern long-eared bats overwinter in caves or abandoned mines and roost in forested habitat, migrating typically 34 to 56 miles between the two habitats in the spring and fall (Caceres and Barclay, 2000; Nagorsen and Brigham, 1993; USFWS, 2014; USFWS, 2022a). Northern long-eared bats may also use alternative hibernacula, such as rock crevices (White et al., 2020) and abandoned railroad tunnels (USFWS, 2015). Northern long-eared bats exhibit strong fidelity to summer roosting areas, but are flexible in roost tree selection (USFWS, 2016; 2022a). Reproductive females prefer snags and live trees with cavities or exfoliating bark in mature-growth forests, while non-reproductive females and males may select live tree cavities, caves, and mines (Caceres and Barclay, 2000; Lacki and Schwierjohann, 2001; Broders and Forbes, 2004; Amelon and Burhans, 2006; Ford et al., 2006). Northern long-eared bats have also been reported roosting in anthropogenic structures (e.g., buildings, barns, utility poles, bat houses, bridges, culverts) in areas with fewer suitable roost trees (USFWS, 2022a, 2024f). Maternity colonies generally consist of 30 to 60 individuals (Caceres and Barclay, 2000; Whitaker and Mumford, 2009), where females give birth to one young between late May and mid-July (USFWS, 2022a).

Based on agency records, there are no known hibernacula within the Study Area; however, there may be undocumented caves, mines, or human-made structures that could be used as hibernacula (USFWS and NDGFD, 2022). Typical (i.e., caves and mines) and atypical (i.e., rocky outcrops and steep rocky or talus slopes) hibernacula surveys conducted along the Project are described in the Little Brown Bat section above. One cave located outside the Project Corridor in Grant County was determined to be a suitable hibernaculum. Hibernacula occupancy surveys were completed at this hibernaculum between September 3 and 28, 2025, to confirm the presence or probable absence of bats in the cave. No northern long-eared bats were captured and probable absence at this hibernaculum is assumed (see Appendix I-3).

North Plains conducted presence/probable absence acoustic surveys and supplemental (elective) mist netting surveys between June and August in 2023, 2024, and 2025, in accordance with USFWS guidelines. Through qualitative analysis, a qualified bat biologist confirmed northern long-eared bat presence at 4 of the 82 sites surveyed within the Study Area in 2023; all 4 sites were located in Morton County, North Dakota. One additional site in Slope County had a confirmed northern long-eared bat detection; however, this site is located outside the Study Area. No detections were confirmed during acoustic surveys in 2024 or 2025. Surveyors did not capture any northern long-eared bats during the supplemental mist netting surveys in 2023 (see Appendix I-3).

Based on published USFWS guidance, North Plains has assumed that forests within three miles of a detection contain occupied northern long-eared bat summer roosting habitat (USFWS, 2024a; USFWS, 2025d). The species could also use existing bridges within 0.25 mile of the Project workspace as summer roosting habitat. See the Little Brown Bat section for additional survey details.

Piping Plover

Piping plovers (*Charadrius melodus*) of the Northern Great Plains breeding population (in Nebraska, South Dakota, North Dakota, and Montana) are listed as threatened (50 FR 50726 [December 11, 1985]) with designated critical habitat in the Northern Great Plains breeding grounds (67 FR 57638 [September 11, 2002]). Current threats to piping plover include habitat loss due to dam construction and modification of reservoirs, channelization of rivers and modification of river flows, and decreases in habitat quality due to human disturbance and invasive plants (USFWS, 2024e). Contamination of alkali lakes from oil and gas development

and collisions with wind turbines and power lines are of concern in the Northern Great Plains (NDGFD, 2025e).

Piping plovers nest on barren sandflats or gravelly beaches, sandbars, islands, and drained river floodplains along rivers, reservoirs, and alkaline (i.e., naturally salty) lakes in North Dakota (USFWS, 2016; NDGFD, 2019b). Breeding populations are known to occur along the Missouri River and Alkali Lakes Core Area, both north of the Study Area (NDGFD, 2019b). Peak breeding in North Dakota is from late May to mid-July (NDGFD, 2019a). Piping plovers leave the breeding grounds between mid-July through August (USFWS, 2024e).

Stopover habitat for the Northern Great Plains piping plover population is not well defined (USFWS, 2016), because piping plovers that breed inland tend to migrate nonstop between breeding and wintering grounds and use stopover sites opportunistically (Elliott-Smith and Haig, 2020; USFWS, 2025f). However, evidence indicates plovers use exposed, sparsely vegetated shorelines along rivers, ponds, lakes, reservoirs, and wetlands (NDGFD, 2019c).

North Plains conducted a desktop review for the piping plover to evaluate documented stopover and breeding habitat occurrences along the Study Area. The NDPR (NDPR, 2024; NDPR, 2025) and eBird (eBird, 2025) data did not identify piping plover occurrences or documented breeding areas within the Study Area. Piping plover observations were primarily clustered along the Missouri River about 6 and 13 miles from the Study Area. The closest designated critical habitat for piping plovers is approximately 6.2 miles east of the Study Area along the Missouri River in North Dakota.

Limited suitable stopover habitat could occur in the Study Area. Piping plovers could occur briefly as migrants moving between winter and breeding habitat during the spring (mid-April through early May) and fall migrations (mid-July through August; NDGFD, 2019c; USFWS, 2024d).

Rufa Red Knot

The rufa red knot (*Calidris canutus rufa*) is listed as a threatened species under the ESA. Current threats to rufa red knot include habitat loss, reduced prey availability, and expanding oil and gas development that increases the risk of alkali lake contamination (NDGFD, 2019a; USFWS, 2020a). Small numbers of rufa red knots are reported annually across the interior United States during their spring and fall migration. Rufa red knots wintering in Texas use a central overland flyway and use sparsely vegetation and open stopover areas in the Great Plains.

Rufa red knots do not nest in North Dakota and are rare migrants during spring and fall migrations (approximately May to October). While there are no known stopover sites consistently used in North Dakota, rufa red knots have been observed along the shoreline of the Missouri River and in sewage lagoons and large permanent freshwater wetlands (NDGFD, 2019a). Individuals may exhibit moderate fidelity to migration stopover areas between years and require habitats rich in easily digested foods (e.g., mollusks, shrimp/crablike organisms, marine worms; USFWS, 2020d). The estimated migration population in North Dakota is less than 100 individuals (NDGFD, 2019a).

There is limited stopover potential for rufa red knots within the Study Area due to limited suitable habitat. North Plains conducted a desktop review to evaluate known rufa red knot occurrences and found no occurrences were within the Study Area. However, observation data from eBird (2025) identified two recent (May 2015) rufa red knot occurrences near an emergent wetland located approximately 1.0 mile from the Study Area in Grant County. Rufa red knots could occur in the Study Area as rare migrants between May and October.

Whooping Crane

The Aransas/Wood Buffalo whooping crane (*Grus americana*) population is listed as endangered under the ESA (32 FR 4001 [March 11, 1967]). The whooping crane was estimated at 536 individuals in the most recent (2022 – 2023) available winter census data (Butler et al., 2023). Current threats include habitat loss and degradation, limited population genetics, collisions with manmade objects such as, power lines and fences, shooting, predation, disease, severe weather, and chemical spills (USFWS, 2024c).

The whooping crane migrates from March through May to the Wood Buffalo National Park in Canada, where it breeds, and from September through November to the Aransas National Wildlife Refuge on the Texas coast, where it winters (USFWS, 2007a; Urbanek and Lewis, 2020). Migrating whooping cranes may travel individually, in family groups, or in small flocks of four to five adults (Urbanek and Lewis, 2020). Whooping cranes are unlikely to spend more than a few days in any one stopover location during migration (Pearse et al., 2020). Roosting sites during stopovers are close to foraging areas and can include palustrine or lacustrine wetlands, prairie and wet meadows, rivers, and agricultural fields near a water source (USFWS, 2007a). Suitable migratory stopover habitat for whooping cranes consists of wetlands with areas of shallow water without visual obstructions and submerged sandbars in wide, unobstructed river channels that are isolated from human disturbance (USFWS, 2009).

The migration corridor is generally defined in bands (e.g., 50 percent, 75 percent, and 95 percent) indicating the percentage of individuals in the migratory population observed in that part of the corridor (Pearse et al., 2018). The 50 percent band of the migration corridor, representing the highest density of sightings, is centered on the Missouri River in North Dakota (Pearse et al., 2018). Though whooping cranes have the potential to stop over across the state (NDGFD, 2021), the greatest likelihood of occurrence and use is expected near the centerline of the migration corridor. The Study Area is almost entirely within the 95 percent migration corridor for whooping cranes. The Oliver Transmission Line and Morton Transmission Line fall entirely within the 50 percent migration corridor.

North Plains conducted a desktop review to evaluate known whooping crane occurrences within the Study Area. While the North Dakota Parks and Recreation Department (NDPR) data did not identify whooping crane occurrences within the Study Area, four whooping cranes have been documented by other sources in Slope, Oliver, and Morton counties, with the most recent occurrences documented in 2019 (NDPR, 2024; NDPR, 2025; USFWS, 2025c; Pearse et al., 2020; eBird, 2025). These sightings were between 0.1 and 0.4 mile from the Project workspace or right-of-way in cultivated crops or grasslands near freshwater emergent wetlands or a pond.

Additionally, North Plains used the Niemuth et al. (2018) dataset to evaluate habitat suitability along the Project for potential whooping crane use. The results indicated a 10 percent or lower chance of whooping crane use within 2 kilometers of the Project Route compared to the rest of North Dakota and South Dakota (WEST, 2024). Though unlikely, whooping cranes may stop over in the Study Area when migrating through North Dakota from April through mid-May and September through early November during spring and fall migration, respectively (NDGFD, 2021).

American Bumble Bee

The American bumble bee (*Bombus pensylvanicus*) is currently under review for federal listing under the ESA (86 FR 53937 [September 29, 2021]). American bumble bees are distributed in eastern temperate forests and Great Plains from southern Canada to Gulf of Mexico and the

desert southwest; eastern Montana is on the extreme western edge of the eastern subspecies' range (Montana Field Guide, 2024). Current threats include pesticides, habitat loss or degradation, urban development, climate change, and diseases introduced by non-native bee species (USFWS, 2024c). Additional threats include parasitic bees (e.g., variable cuckoo bumble bee) (Montana Field Guide, 2024).

American bumble bees are found in open farmlands, fields, and prairie patches (Liczner and Colla 2020; USFWS, 2021). They primarily nest in tall grass, and less frequently below ground. American bumble bees are important pollinators of native plants and agricultural crops, and feed on a wide variety of flowers (USFWS, 2021). In North Dakota, highly attractive native plants to bumble bees begin to bloom between March and May (Hatfield et al., 2012).

American bumble bees have the potential to occur throughout North Dakota, albeit likely at a low abundance compared to other *Bombus* species (Pei et al., 2022). Twenty-two American bumble bees were identified during state-wide sampling in North Dakota from 2017–2020. While the study showed no clear spatial distribution across the state, modeled species density estimates around each capture did find low to moderate density probabilities within the Study Area (Pei et al., 2022). However, based on the locations of sampling locations and low number of American bumble bee captures, the specific capture locations have a low likelihood of being within the Study Area (Pei et al., 2022).

Bumble Bee Watch (2025) and iNaturalist (iNaturalist, 2025) also documented recent American bumble bee occurrences in Grant (2024), Morton (2024), and Oliver (2024) counties, and historic occurrences in Golden Valley (1926) and Hettinger (1918) counties. Though none of these occurrences were recorded within the Study Area, suitable habitat is present and American bumble bees may occur with the Study Area.

Suckley's Cuckoo Bumble Bee

The Suckley's cuckoo bumble bee (*Bombus suckleyi*) is currently proposed for listing as endangered under the ESA (89 FR 102074 [December 17, 2024]). The western portion of Suckley's cuckoo bumble bee range spans from the Yukon down to Arizona and east to Nebraska and Minnesota (USFWS, 2024g). Suckley's cuckoo bumble bee distribution is known from only about 2,317 occurrence records across North America (USFWS, 2024g). Current threats include loss of host species, pesticides, habitat loss, climate change, and diseases introduced by non-native bee species (89 FR 102074; Washington Department of Fish and Wildlife, 2025).

Suckley's cuckoo bumble bees are obligate social parasites and are found in similar habitats as their host species, including prairies, grasslands, meadows, woodlands, croplands, and urban parks (NDGFD, 2018; USFWS, 2024g). Suckley's cuckoo bumble bees are generalists and forage in meadows, grasslands, and developed areas (USFWS, 2024g). While Suckley's cuckoo bumble bees can consume pollen, they cannot carry it and do not produce a worker caste, relying on their host species to provide for their young (USFWS, 2024g).

As social parasites, Suckley's cuckoo bumble bees are naturally less abundant and generally have distributions smaller than their host species. Suckley's cuckoo bumble bees have not been observed in the contiguous United States since 2016 (USFWS, 2024g). There are no citizen science records of occurrences in North Dakota (Bumble Bee Watch, 2025; iNaturalist, 2025) and Suckley's cuckoo bumble bees were not identified during two recent statewide sampling efforts in North Dakota grasslands (Otto et al., 2020; Pei et al., 2022). Of the two confirmed host species,

only the Nevada bumble bee has recent (post-2000) observations scattered across North Dakota (iNaturalist, 2025).

The compiled occurrence data for the Species Status Assessment (USFWS, 2024g) did not indicate any records within Project counties. Given the lack of occurrences in Project counties and species' population decline, Suckley's cuckoo bumble bees are not anticipated to be present in the Study Area.

Dakota Skipper

The Dakota skipper (*Hesperia dacotae*) is federally listed as threatened under the ESA (79 FR 63671 [October 24, 2014]) with designated critical habitat in southeastern North Dakota, north central North Dakota, and near the Missouri River corridor. Dakota skippers are distributed within the north-central United States, including North Dakota. Current threats include habitat loss, fragmentation, and degradation due to conversion of native prairies for agriculture or urbanization, invasive plant species, and land management regimes such as grazing, haying, or fire (USFWS, 2018).

The Dakota skipper is a prairie obligate species associated with high-quality remnant (i.e., unplowed or unbroken) native prairie grasslands and pastures dominated by native grass and forb species. Within the Study Area, Dakota skipper habitat typically consists of upland mixed grass prairie that is relatively dry and includes ridges and hillsides (USFWS, 2018). Reproductive habitat typically includes dense stands of bunchgrass and needlegrasses, and larvae overwinter at the base of the grasses in silk shelters (USFWS, 2018). Adult skippers have one flight period per year that begins annually from mid-June through July and require foraging habitat containing requisite nectar-producing forbs, such as purple coneflower, bluebell bellflowers (*Campanula rotundifolia*), and blanket flower (*Gaillardia aristata*) (Dana, 1991).

As of 2017, extant Dakota skipper populations were primarily clustered in northwest and north-central North Dakota (USFWS, 2018). NDPR (NDPR, 2024, NDPR, 2025), iNaturalist (2025), and USFWS (2023d) data did not identify Dakota skipper occurrences within the Study Area, with the closest USFWS occurrence documented over 7 miles north of the Study Area in Oliver County, North Dakota (USFWS, 2023a). The closest designated critical habitat for Dakota skippers is over 79 miles northeast of the Study Area (USFWS, 2025c). Based on Dakota skipper occurrences and the USFWS Dakota skipper habitat suitability model,[4] Dakota skippers are more likely to be present on the eastern end of the Study Area in North Dakota (Barnes et al., 2024).

During the 2023, 2024, and 2025 field seasons, North Plains documented potential reproductive and foraging habitat present in all Project counties in North Dakota (see Appendix I-4). As of 2025, the Project Corridor contained 408.3 acres of potential reproductive habitat and 39.0 acres of foraging habitat. Dakota skipper reproductive and foraging habitat surveys are ongoing and will be completed in 2026.

In 2024 and 2025, North Plains conducted Dakota skipper presence/likely absence surveys within select areas identified as containing the highest quality potential Dakota skipper habitat along the Project. Although no Dakota skippers were identified during these surveys in 2024 or 2025 (see Appendix I-5), a single male Dakota skipper was incidentally encountered within the right-of-way

[4] In 2022 and early 2023, the USFWS developed a predictive model to identify potential Dakota skipper habitats and support field survey planning. Per USFWS (L. Toso, pers. comm., March 2023), this model uses known Dakota skipper occurrence locations and ecological indicators to predict the potential habitat suitability for Dakota skipper. The resulting data layer assigns a probability value (1-100%) to each 30-meter by 30-meter grid cell in the Dakota skipper species range.

in Morton County during reproductive and foraging habitat surveys in 2024; this was the first recorded Dakota skipper occurrence in Morton County, North Dakota. North Plains considers the area within 0.6-mile (i.e., the Dakota skipper dispersal distance) of the incidental occurrence as occupied. Within the occupied area, North Plains considers suitable occupied habitat to include reproductive habitat and adjacent foraging habitat.

Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is proposed for listing as threatened under the ESA (89 FR 100662 [December 12, 2024]) and can be found throughout most of the contiguous United States (USFWS, 2020b). Current threats include habitat loss and degradation from conversion of grasslands to agriculture, logging/thinning of overwintering sites, herbicide use, drought, and urban development; insecticide use; and effects of climate change (89 FR 100662 [December 12, 2024]).

North Dakota lies on the western edge of the migration flyway for the eastern North American population (i.e., east of the Rocky Mountains) (USFWS, 2023b). Monarchs mate at their overwintering sites in Mexico and then begin their long-distance migration north to summer grounds (USFWS, 2020b). Monarchs require trees (e.g., pine [*Pinus* spp.], fir [*Abies* spp.], and cedar [*Juniperus* spp.) for roosting during migration.

Monarchs lay their eggs on their obligated milkweed host plant (*Asclepias* spp.) throughout migration and can produce multiple generations in a single breeding season (USFWS, 2020b). Larvae are obligated milkweed feeders whereas adults consume the nectar of a variety of flowers in varied habitats, including fields and grasslands, roadsides, open areas, wet areas, and urban gardens (Monarch Joint Venture, 2025; USFS, 2025a, 2025b). Adult monarchs require a diverse array of flowering plants from summer through fall.

Monarch butterflies are commonly observed in North Dakota during the summer (NDGFD, 2019a). North Plains conducted general habitat mapping surveys from June through October between 2022 and 2025 in all counties crossed by the Project. Field surveyors reported the presence of milkweed patches in all Project counties, and surveyors incidentally observed monarch butterflies in Golden Valley, Morton, Oliver, and Slope counties, North Dakota. Monarchs were also documented during 2024 Dakota skipper presence/likely absence surveys in Morton and Oliver counties, North Dakota.

Western Regal Fritillary

The western regal fritillary (*Argynnis idalia occidentalis*) is proposed for listing as threatened under the ESA (89 FR 63888 [August 6, 2024]) due to habitat loss and fragmentation, and herbicide and insecticide use (NDGFD, 2019a, 2019d; USFWS, 2020c). Western regal fritillaries are currently restricted to tall-grass prairie remnants in scattered areas of the Great Plains (Selby, 2007).

Western regal fritillaries are found in tall-grass prairies and wet prairie habitats, such as damp meadows, marshes, wet fields, and mountain pastures (Selby, 2007; NDGFD, 2019a). All life stages of the western regal fritillary require tall or mixed-height, warm-season native grasses that provide tussocks and vegetative litter as shelter (Selby, 2007). Females lay eggs in shaded sites of grass and forbs near the ground, and larvae overwinter in leaf litter (Montana Field Guide, 2024). The larvae feed exclusively on native violets (*Viola* spp.) whereas adults consume the nectar of a variety of flowers (Montana Field Guide, 2024).

During statewide North Dakota pollinator surveys from 2017 to 2019, western regal fritillaries were detected in almost every county, including Project counties, although abundance was low (USFWS, 2023e). During the 2024 and 2025 Dakota skipper presence/likely absence surveys, surveyors recorded western regal fritillaries in Slope, Grant, Morton, and Oliver counties. General habitat mapping surveys conducted from June through October between 2022 and 2025 also documented the presence of violet patches in Morton and Slope counties, North Dakota. Field surveyors recorded additional incidental observation of western regal fritillaries in Hettinger and Slope counties, North Dakota; however, a species specialist was not present in the field to verify these observations.

6.11.1.2 U.S. Forest Service Sensitive Species

The USFS maintains a list of Regional Forester's Sensitive Species (RFSS) to track and identify species facing population viability concerns within NFS lands (USFS, 2024b). North Plains completed a desktop review of RFSS wildlife and plant species with potential habitat and/or documented occurrences within the vicinity of the Project on NFS lands. Based on occurrence data provided by USFS (USFS, 2023; USFS, 2024) and NDPR (NDPR, 2025), along with Project-specific survey results, two USFS RFSS are known to occur within the Study Area on NFS lands—Hooker's Townsend-daisy (*Townsendia hookeri*) and western long-eared bat (*Myotis evotis*). One additional RFSS mammal species, the black-tailed prairie dog (*Cynomys ludovicianus*), has the potential to occur in the region, they were not observed within the Project workspace or right-of-way during surveys.[5]

In 2022 through 2025, North Plains conducted presence/probable absence surveys for RFSS plants within the typical survey area on NFS lands. Surveyors visited each LMNG survey area during multiple blooming periods to document potential RFSS plant occurrences. The RFSS plant species Hooker's Townsend-daisy was documented in multiple locations in Slope County during early spring (mid-April to mid-May) Project surveys in 2022, 2023, and 2024 (see Appendix I-6). None were observed during Project surveys in 2025. In 2022, surveyors recorded three small occurrences cumulatively consisting of 15 plants. During the 2023 surveys, surveys recorded 20 occurrences cumulatively consisting of approximately 117 plants. In 2024, surveyors identified an additional 29 occurrences cumulatively consisting of approximately 204 plants. The population of each occurrence varied from a single plant to populations containing 50 plants. All observations of Hooker's Townsend-daisy were found in areas with generally flat to gently sloping gravel with bare, eroded soils. The plants occupied shoulder slopes that transitioned uphill into native grassland benches and downslope to steeper, more highly eroded slopes. Of these 52 total occurrences, 5 occurrences are located within the Project right-of-way; however, no occurrences are located within the Project workspace. Additional occurrences of Hooker's Townsend-daisy were recorded outside the Study Area; however, no other RFSS plant species were identified during Project surveys.

North Plains conducted presence/probable absence acoustic surveys at nine sites on NFS lands from June to July in 2023, 2024, and 2025. Of the nine acoustic survey sites on NFS lands, two in Slope County had confirmed western long-eared bat presence in 2023 and 2024. None were confirmed in 2025 on NFS lands. North Plains also conducted supplemental mist netting surveys at two sites on NFS lands in July 2023; however, no western long-eared bats were captured during these surveys (see Appendix I-3).

[5] RFSS that are also considered federally listed, proposed, or under review are discussed in Section 6.11.1.1. Similarly, RFSS raptors and migratory birds are discussed in Sections 6.11.1.4 and 6.11.1.3, respectively.

6.11.1.3 Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711 [1918]). Federal Executive Order 13186 (2001) (66 FR 3853 [January 17, 2001]) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the USFWS. Executive Order 13186 was issued in part to ensure that environmental analyses of federal actions assess the impacts of these actions on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the direct take of any migratory bird without authorization from the USFWS.

North Dakota provides important breeding and migratory habitat for a variety of waterfowl species. While the Study Area does not cross the Prairie Pothole Region, western North Dakota provides important migration and stopover habitat for waterfowl that breed in northern North Dakota and Canada (NDGFD, 2019c, 2019e).

6.11.1.4 Raptors and Eagles

Bald and golden eagles are protected by federal law under the Bald and Golden Eagles Protection Act (BGEPA) (16 U.S.C. 668-668d [1940]) and the MBTA. The BGEPA prohibits take, possession, transport, export, or import of any bald or golden eagle, whether alive or dead, including parts, nests, or eggs, unless allowed by permit. “Take” includes pursuing, shooting, wounding, killing, or disturbing. “Disturb” includes agitating or bothering to a degree that causes or is likely to cause injury, decreased productivity, or nest abandonment by interfering with normal breeding, feeding, or sheltering behavior. If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles occur, then project proponents may need to take additional conservation measures to achieve compliance with the BGEPA.

North Plains completed aerial surveys for raptor nests, including bald and golden eagle nests, along the Project in 2022 and 2023. Surveys were conducted within a 1-mile buffer on either side of the proposed Project route at the time of survey and expanded to a 2-mile buffer in areas with high potential golden eagle (*Aquila chrysaetos*) nest density (USFWS, 2019). The survey documented raptor stick nests, with a focus on sensitive species, such as the bald eagle (*Haliaeetus leucocephalus*) and golden eagle, ferruginous hawk, and prairie falcon (*Falco mexicanus*). Survey methods also followed guidance provided by NDGFD.

Surveys in 2022 documented one golden eagle nest in a powerline structure located adjacent to the Project right-of-way in Morton County; however, this nest was removed by the line owner and confirmed absent during Project surveys in 2023. Though no other confirmed bald or golden eagle nests were documented within one mile of the Project Route, four other nests consistent in size and structure with an eagle nest (i.e., potential bald or golden eagle nests) were observed within the Study Area in Slope and Grant counties, including one active ferruginous hawk nest. One additional active ferruginous hawk nest (non-eagle sized nest) was recorded in Hettinger County and one prairie falcon nest was recorded in Slope County; both these nests were located within one mile of the Project Route, but outside the Study Area. The 2022 and 2023 Raptor Nest Survey Report is provided in Appendix I-7.

6.11.1.5 Prairie Grouse

Three species of prairie grouse are found in North Dakota: the greater prairie-chicken (*Tympanuchus cupido*), the sharp-tailed grouse (*Tympanuchus phasianellus*), and the greater sage-grouse (*Centrocercus urophasianus*). The Project avoids the range of the greater prairie-chicken which is located in eastern North Dakota and central South Dakota.

North Plains conducted aerial lek surveys for sharp-tailed grouse and greater sage-grouse in North Dakota in 2022. A lek is a gathering area where male prairie grouse perform courtship displays to attract females during the breeding season. Active leks were defined as those with two or more grouse observed during at least one visit. The Greater Sage-Grouse and Sharp-tailed Grouse Lek Survey Report is provided in Appendix I-8.

Sharp-tailed Grouse

Sharp-tailed grouse are not federally protected under the ESA or MBTA; however, there are state hunting regulations that specify hunting seasons and bag limits. The USFS in North Dakota has identified sharp-tailed grouse as a management indicator species on the Dakota Prairie Grasslands (USFS, 2001). NDGFD does not currently have a species-specific management plan for sharp-tailed grouse.

Sharp-tailed grouse are distributed throughout western North Dakota (NDGFD, 2025f) and are commonly found in relatively undisturbed mixed-grass prairie with patches of small trees and shrubs (NDGFD, 2019a). Leks are typically situated on elevated areas with less vegetation than the surrounding landscape. Nests are generally located nearby, often within 0.5 mile of the lek (NDGFD, 2025f).

The aerial lek survey documented 18 active sharp-tailed grouse leks within 1 mile of Project structures, including 5 active sharp-tailed grouse leks within the Study Area and typical nesting range. No active leks were documented within the Project Corridor.

Greater Sage-grouse

Greater sage-grouse are not federally listed under the ESA or protected under the MBTA. In North Dakota, no state regulations specifically govern greater sage-grouse; however, the Management Plan and Conservation Strategies for Greater Sage-Grouse in North Dakota (Robinson, 2014) was developed to guide the state's management efforts.

Greater sage-grouse are primarily associated with sagebrush habitat, particularly big sagebrush, with silver sagebrush and rabbitbrush used to a lesser extent (NDGFD, 2019a). Leks are typically located in natural openings within sagebrush communities or in areas created by disturbance. Nests are generally found under larger bushes, typically within 0.9 to 1.9 miles of the lek. NDGFD has mapped greater sage-grouse habitat in North Dakota, called the Priority Conservation Area (PCA). The PCA includes areas with a high density of nesting females.

North Plains surveyed for greater sage-grouse leks during the same surveys as sharp-tailed grouse. No active greater sage-grouse leks were observed in North Dakota during surveys. Lek data provided by NDGFD (2021) identified no active greater sage-grouse leks within 2 miles of the Project Corridor. The closest active lek is approximately 3.2 miles south of the Study Area in Slope County.

6.11.2 Avoidance and/or Minimization

6.11.2.1 Federally Listed, Proposed, and Under Review Species

Based on agency coordination, the NDGFD indicated that the Project is not anticipated to result in significant adverse effects on wildlife or wildlife habitat, including Species of Greatest Conservation Need, provided that their recommendations are applied where appropriate (see Section 7.2.3 for further details).

Little Brown Bat

As noted, little brown bats are likely to be present in occupied summer roosting habitat (e.g. forests) in or adjacent to Project workspace and right-of-way. As such, the species may be affected by Project construction and operation. One suitable hibernaculum identified during Project surveys was determined to be unoccupied, based on hibernacula occupancy surveys conducted by North Plains in 2025, and no other known little brown bat hibernacula were identified in the Study Area. No Project impacts are anticipated to little brown bat winter habitat.

During the active bat season, construction noise, lights, and human presence could disturb roosting bats, leading to changes in feeding or reproductive behavior, displacement or lost access to foraging and roosting habitat, increased stress, and abandonment or loss of young. Noise impacts will depend on the noise level, duration, and distance from the source, and could lead to avoidance or injury. In addition, bats could be exposed to the effects of fugitive dust, depending on the bat's proximity to the Project workspace.

Tree removal in the Project workspace and right-of-way will lead to the loss of occupied summer roosting habitat. Vegetation and tree removal could physically harm individuals, particularly young that are not yet volant, if tree felling occurs during the pup season (June 1 – August 15). Collisions with Project infrastructure could also physically harm individuals and lead to mortality; however, bat collisions with power lines or and other stationary infrastructure in the United States are uncommon, and not an identified threat for *Myotis* species, including little brown bat or northern long-eared bat (USFWS, 2022a).

Habitat disturbance and removal due to Project construction and permanent right-of-way maintenance are expected to result in the permanent loss of 24.4 acres of occupied summer roosting habitat within the right-of-way and permanent Project workspaces and the temporary loss of up to 0.5 acre of occupied summer roosting habitat within temporary Project workspaces. This habitat loss will be spread out along the linear transmission line corridor and primarily associated riparian areas; only small portions of available forest habitats will typically be affected. Similarly, forest habitat fragmentation is not anticipated to have an adverse effect on the species since bats can disperse over greater distances than the transmission line and road rights-of-way. Conversely, clearing linear corridors through forests may have a beneficial impact by providing more diverse foraging habitat for the little brown bat.

Conservation measures that will be implemented to avoid or minimize impacts to the little brown bat are based on measures established for the federally endangered northern long-eared bat, as proposed by North Plains in accordance with USFWS guidance (USFWS, 2024d) and listed below. Should the little brown bat become proposed for listing prior to or during Project construction, the DOE and/or North Plains would coordinate with the USFWS.

Within occupied summer roosting habitat:

- Avoid construction, tree felling, and bridge repair within 1.5 miles of a little brown bat acoustic detection or known or potentially occupied bridge during the pup season (June 1 – August 15; USFWS, 2024d).
    - Prior to construction, North Plains may assess bridges within 0.25 mile of the Project workspace or right-of-way in occupied habitat for summer roost suitability, in accordance with USFWS survey guidelines (USFWS, 2024a). If a bridge is found to be occupied, North Plains will avoid construction, tree felling, and bridge repair within 1.5 miles of the bridge during the pup season. If a bridge is unoccupied, the pup season restriction would not apply.
    - If construction must occur in select areas within the Project workspace or right-of-way during the pup season, conduct presence / probable absence mist netting and telemetry surveys (to the extent possible) to identify maternity roosts and implement a 150-foot avoidance buffer from roost trees.
- Avoid burning and blasting activities within 0.25 mile of occupied bridges during the pup season when maternity roosts may be present; develop site-specific blasting plans if blasting is proposed within 0.5 mile of occupied bridges.

Given the limited forested habitat affected and with the implementation of conservation measures, construction and operation will have minimal adverse effects on the little brown bat.

Northern Long-eared Bat

As noted, northern long-eared bats are likely to be present in occupied summer roosting habitat in or adjacent to Project workspace and right-of-way. As such, the species may be affected by Project construction and operation. One suitable hibernaculum identified during Project surveys was determined to be unoccupied, based on hibernacula occupancy surveys conducted by North Plains in 2025, and no other known northern long-eared bat hibernacula were identified in the Study Area. No Project impacts are anticipated to northern long-eared bat winter habitat.

The type and duration of impacts are expected to be the same as discussed above for the little brown bat, although due to the smaller number of acoustic detections, less occupied summer roosting habitat would be permanently or temporarily removed. For northern long-eared bats, habitat disturbance and removal are expected to result in the permanent loss of 5.7 acres of occupied summer roosting habitat within the right-of-way and permanent Project workspaces and the temporary loss of less than 0.1 acre of occupied summer roosting habitat within temporary Project workspaces. As with the little brown bat, forest habitat loss will be spread out along the linear transmission line corridor and primarily associated riparian areas.

Conservation measures that will be implemented for the northern long-eared bat are the same as those listed above for the little brown bat, although the measures will be based on northern long-eared bat detections and adjusted for consistency with the terms and conditions identified during Section 7 consultation with USFWS, if needed.

Given the limited forested habitat affected and with the implementation of conservation measures, construction and operation will have minimal adverse effects on the northern long-eared bat.

Piping Plover

Piping plover breeding habitat has not been documented within the Study Area, and no Project impacts to piping plover are anticipated during the breeding season. However, piping plovers may occur briefly in the Project workspace and right-of-way as migrants when moving between winter and breeding habitats during the spring (mid-April through early May) and fall (mid-July through August) migrations. Although the likelihood of piping plover presence is low, limited suitable stopover habitat is present within the Project workspace and right-of-way, and the potential for piping plover occurrence exists. If present, piping plover may be affected by Project construction and operation.

Piping plovers are highly mobile and unlikely to be directly injured by Project construction or operations. Potential impacts to piping plovers are expected to be limited to temporary disturbance of adult and/or juvenile birds during the spring and fall migrations. During these periods, construction noise, lights, and human presence could startle or displace piping plovers, decreasing the time spent on normal foraging activities and rest, or increasing time in-flight to search for and travel to alternative stopover habitat. Impacts are expected to be rare, given the lack of documented occurrences of piping plovers in the Study Area, limited suitable stopover habitat, and the distance to breeding habitat near the Missouri River.

In the unlikely event a piping plover is sighted during Project construction, activities within a 0.6-mile radius will cease until the bird has left the area and North Plains will notify the USFWS of the sighting. The typical occurrence window is between April 15 and August 31; however, the conservation measure would apply year-round. Given that both the presence of the species and adverse effects are highly unlikely, potential adverse effects to piping plover are expected to be minimal.

Rufa Red Knot

Rufa red knots do not breed in North Dakota; however, they may occur in the Study Area as rare migrants during spring and fall migrations between May and October. As with piping plovers, the likelihood of rufa red knot presence is low, but limited suitable stopover habitat is present within the Project workspace and right-of-way, and the potential for rufa red knot occurrence exists. If present, rufa red knot may be affected by Project construction and operation.

Potential impacts to rufa red knot are expected to be similar to the piping plover above and limited to spring and fall migration. Impacts are expected to be rare, given the lack of documented occurrences of rufa red knot in the Study Area and the limited suitable stopover habitat.

In the unlikely event a rufa red knot is sighted during Project construction, activities within a 0.6-mile radius will cease until the bird has left the area and North Plains will notify the USFWS of the sighting. The typical occurrence window is between May and October; however, the conservation measure would apply year-round. Given that both the presence of the species and adverse effects are highly unlikely, potential adverse effects to rufa red knot are expected to be minimal.

Whooping Crane

Similar to the piping plover and rufa red knot, whooping cranes do not breed in North Dakota but may use potential stopover habitat within the Study Area during spring (April through mid-May) and fall (September through early November) migrations. As discussed in Section 6.11.1.1., the likelihood of stopover habitat use near the Project is low, but suitable stopover habitat is present

within the Project workspace and right-of-way and whooping crane presence has been documented within the Study Area. As such, whooping crane may be affected by Project construction and operation.

As with rufa red knot and piping plover, potential impacts to whooping cranes are expected to be limited to spring and fall migration. The Project may result in a functional loss of suitable migration stopover habitat, as whooping cranes may avoid potential stopover habitat within approximately 1.2 miles (2 kilometers) of Project infrastructure based on their strong preference for open habitat and aversion to tall structures (Ellis et al., 2022). However, potential stopover habitat within this area was found to have a low likelihood of use by the species based on the Niemuth habitat suitability model (Niemuth et al. 2018), with no greater than a 10 percent chance of use compared to other habitat in North Dakota and South Dakota. These results indicate that potential stopover habitat in the Project's potential avoidance is of low quality or otherwise not preferred by the species.

Approximately 120 miles of the Project Route in North Dakota is located within the 50 percent and 75 percent whooping crane migration corridors, where crane presence is more likely. Though rare, whooping crane collisions with transmission lines have been documented (Brightwell et al., 2025). During migration, whooping cranes typically fly at altitudes well above even the tallest transmission line structures (Avian Powerline Interaction Committee [APLIC], 2012; Urbanek and Lewis, 2020). As a result, whooping crane exposure to power lines is primarily limited to low altitude flights during ascent or descent to stopover habitat or under conditions of poor visibility such as inclement weather or low light (APLIC, 2012). Under these conditions, individual cranes may fail to detect Project infrastructure and risk collision, potentially resulting in injury.

To minimize the risk of adverse effects to whooping cranes, North Plains will implement the following conservation measures.

- If whooping cranes are sighted during Project construction or operational activities, work within a 1-mile radius will cease until the cranes have left the area and North Plains will notify the USFWS of the sighting. The typical migration seasons include April to May for spring migration and September and October for fall migration; however, the conservation measure will apply year-round.

- During construction, lower or mark for visibility any equipment over 15 feet tall when not in use, at night, or during low visibility conditions (USFWS, 2025c).

- Install bird flight diverters on OPGW within 1 mile of suitable habitat within the 50 and 75 percent bands of the whooping crane migration corridor in North Dakota to minimize the likelihood of collision with OPGW during Project operation.

- Ensure all Project staff and contractors working on-site participate in an environmental awareness training program that includes proper identification, response protocol, and reporting of whooping cranes. Additionally, provide pamphlets or identification guides to operations staff and contractors while conducting work on-site during the migration seasons.

Further information on conservation measures the Project will implement during the Project siting and design, construction, and reclamation phases to reduce potential impacts to migratory birds (including federally listed species), are outlined in the MBTA Compliance Plan (see Attachment G of the CMRP in Appendix G).

Given the low likelihood of stopover habitat use and implementation of conservation measures discussed above, construction and operation will have minimal adverse effects on the whooping crane.

American Bumble Bee

Despite extensive state-wide surveys and other records, there are no known records of American bumble bees within the Study Area. However, suitable habitat is present in the Project workspace, and the potential American bumble bee occurrence exists, based on rare occurrences and low to moderate population density modeling within the Project counties. If present, American bumble bee may be affected by Project construction and operation.

In the unlikely event American bumble bees are present, they could be exposed to construction activities and vegetation management during operation. Construction noise, lights, and human presence may temporarily disturb adult American bumble bees by causing individuals to alter their flight or activity, leading to changes in reproductive or feeding behavior; however, these effects are not expected to have a biologically meaningful effect. Increased foot traffic, vehicle use, and construction equipment could trample vegetation and create localized soil disturbances that may alter plant communities. Ground disturbance could physically harm individuals, particularly queens and larvae in underground or ground nests, and overwintering queens hibernating in decaying wood. Depending on their proximity to the Project workspace, American bumble bees could also be exposed to effects from herbicide use and fugitive dust. Disturbed ground can lead to degraded habitat through soil erosion and the establishment of noxious weeds and invasive plants, which could reduce the area's capacity to support individuals.

Habitat disturbance and removal due to Project construction are expected to result in the permanent loss of approximately 26.0 acres of suitable grassland habitat and the temporary loss of up to 1,455.5 acres of suitable grassland habitat within Project workspaces. These impacts would be spread across the linear corridor, creating a limited and localized reduction in suitable habitat relative to the remaining suitable habitat within the Study Area and beyond.

General Project conservation measures intended to control noxious weeds, restore vegetative cover, stabilize soils, and minimize the effects of construction disturbance on native habitats will help minimize impacts to the American bumble bees' grassland habitat. In addition, conservation measures implemented for the federally listed Dakota skipper will help further minimize the potential for injury or mortality of American bumble bees, should they be present (conservation measures for the Dakota skipper are provided below).

Should the American bumble bee become proposed for listing prior to or during Project construction, the DOE and/or North Plains would coordinate with the USFWS. Given the low likelihood of species presence, the availability of grassland habitat outside the Project workspace, and implementation of conservation measures discussed above, construction and operation will have minimal adverse effects on the American bumble bee.

Suckley's Cuckoo Bumble Bee

Despite extensive state-wide surveys and citizen science records, Suckley's cuckoo bumble bee has not been documented in North Dakota and is unlikely to be present in the Study Area or state.

No impacts to Suckley's cuckoo bumble bee are anticipated from Project construction or operation.

Dakota Skipper

One Dakota skipper was identified incidentally during Project habitat surveys within the Study Area, and Dakota skippers are assumed present within occupied reproductive and foraging habitat within a 0.6-mile buffer of that occurrence in the Project right-of-way. As such, the species may be affected by Project construction and operation.

Impacts to Dakota skippers in or adjacent to the Project workspace are expected to be similar to those described for the American bumble bee. However, unlike the American bumble bee, Dakota skippers are unlikely to breed in native grassland habitat that has been altered by ground-disturbing activities, such as the revegetated temporary workspace areas. Therefore, both temporary and permanent habitat disturbance is considered a permanent reproductive habitat loss for the species. The species will still forage in altered grasslands habitat, so the permanent loss of foraging habitat is anticipated to be smaller. However, for this analysis, temporary loss of both reproductive and foraging habitat is conservatively assumed to be permanent where ground disturbance may occur. Though Project construction will occur within approximately 4.3 acres of occupied reproductive habitat, construction matting will minimize the ground disturbance within occupied habitat to approximately 0.1 acre of permanent loss.

As a part of the Project design process, North Plains adjusted, where practicable, Project infrastructure, access road, and other workspace locations to minimize the Project workspace within both occupied and unoccupied Dakota skipper reproductive and foraging habitat, particularly east of Grant County, North Dakota. General Project conservation measures identified above for the American bumble bee will also help reduce potential impacts to Dakota skipper habitat. North Plains will further minimize effects to Dakota skipper with the following conservation measures identified in coordination with the USFWS.

Within reproductive and foraging habitat in North Dakota:

- Apply construction mats to avoid temporary ground disturbance where siting avoidance is not possible.
- Prioritize water, soy-based, or other non-chemical dust suppressant, as practicable.
- After construction within DASK reproductive habitats, restore vegetative cover with a certified weed-free seed mix that includes native plants with a high forb-to-grass ratio to support Dakota skipper and other pollinator foraging and dispersal.

Within occupied habitat:

- Avoid construction in Dakota skipper reproductive habitat during the adult flight period (approximately June 10 – July 25).
- Avoid burning brush piles within 0.6 mile of reproductive habitat during the adult flight period.
- Minimize herbicide and pesticide use within occupied reproductive and foraging habitat year-round. Where necessary within these areas, North Plains will conduct targeted (e.g., spot) herbicide and pesticide application outside the adult flight period to avoid impacts during construction and O&M activities.

North Plains will adjust conservation measures for consistency with the terms and conditions identified during Section 7 consultation with USFWS, if needed. Given the limited occupied Dakota skipper habitat affected and with the implementation of conservation measures, the Project is expected to have minimal adverse effects on Dakota skippers.

Monarch Butterfly

Given the Project-wide availability of suitable habitat (including grasslands, shrublands, and forests) and presence of larval host plants (i.e., milkweed) within the Study Area, as well as documented sightings of the monarch butterfly in multiple Project counties, monarch butterflies may be affected by Project construction and operation.

Impacts are expected to be similar to those described for the American bumble bee, since the species will utilize previously disturbed and unbroken grassland habitats. In addition, the monarch can also utilize shrublands and forested areas. Habitat disturbance and removal due to Project construction are expected to result in the permanent loss of approximately 29.1 acres of suitable habitat and a temporary loss of up to 1,550.0 acres of suitable habitat. Additionally, 23.6 acres of forested habitat would be permanently converted to low-growing vegetation within the right-of-way. These impacts would be spread across the linear corridor, creating a limited and localized reduction in suitable habitat relative to the remaining suitable habitat within the Study Area and beyond.

The general Project conservation measures noted above for the American bumble bee will also help reduce potential impacts to monarch butterfly habitat. Likewise, Dakota skipper conservation measures will also reduce impacts to the species (see above).

Should the monarch butterfly become listed, the DOE and/or North Plains would coordinate with the USFWS. North Plains will adjust conservation measures for consistency with the terms and conditions identified Section 7 consultation with USFWS, if needed. Therefore, potential adverse effects to the monarch butterfly are expected to be minimal.

Western Regal Fritillary

Given the Project-wide availability of suitable habitat and presence of larval host plants (i.e., violets) within the Study Area, as well as documented sightings of the species in multiple Project counties, western regal fritillary may be affected by Project construction and operation.

Impacts to western regal fritillaries are expected to be similar to those described for the American bumble bee, since the species will utilize previously disturbed grassland habitats. Habitat disturbance and removal due to Project construction are expected to result in the permanent loss of approximately 26.0 acres of suitable grassland habitat and the temporary loss of up to 1,455.5 acres of suitable grassland habitat within Project workspaces. These impacts would be spread across the linear corridor, creating a limited and localized reduction in suitable habitat relative to the remaining suitable habitat within the Study Area and beyond.

The same conservation measures for the two butterfly species will also help reduce impacts to western regal fritillaries. Should the species become listed, the DOE and/or North Plains would coordinate with the USFWS. North Plains will adjust conservation measures for consistency with the terms and conditions identified Section 7 consultation with USFWS, if needed. Therefore, potential adverse effects to the western regal fritillary are expected to be minimal.

6.11.2.2 U.S. Forest Service Sensitive Species

As discussed in Section 6.11.1.2, one USFS RFSS plant species (Hooker's Townsend-daisy) and one mammal species (western long-eared myotis) were documented during surveys within the Project workspace and right-of-way on NFS lands. One additional RFSS species, the black-tailed prairie dog, has the potential to occur, but was not observed within the Project workspace or right-of-way on USFS-managed lands or documented within the Project workspace based on USFS survey data (USFS, 2023; USFS, 2024). These three species may be affected by Project construction and operation.

Project workspaces have been adjusted to avoid direct impacts to known Hooker's Townsend-daisy occurrences and avoid or minimize direct impacts to occupied suitable habitat. Five occurrences remain within the right-of-way, and may experience temporary, intermittent impacts during operational maintenance. Per the North Dakota Noxious Weed Management Plan, North Plains will not apply herbicides within 100 feet of known RFSS plant occurrences within USFS-managed lands without prior approval.

Impacts to the western long-eared bats could include temporary indirect impacts from construction disturbance in and adjacent to Project workspace and right-of-way. The bat could experience temporary displacement due to noise and activity, and permanent impacts from lost tree roosting habitat. Impacts would be higher if tree removal occurs during the bat pup season in maternity colony habitat. However, forested habitat is scarce within LMNG and western long-eared bat occurrences are located within the occupied little brown bat summer habitat. Conservation measures applied for the little brown bat will also reduce impacts to western long-eared bat. Impacts to rocky outcrops or fissures within the Project workspace may also temporarily displace the western long-eared myotis from this roosting habitat.

Though not currently present, black-tailed prairie dogs could be directly affected by ground disturbance during construction if new colonies are established within the Project workspace. Direct impacts would generally be temporary, with intermittent, localized disturbance possible during operation and maintenance. Increased permanent predation pressure from raptors using the transmission line for perching may also occur.

Coordination with the USFS is ongoing, and avoidance and minimization measures specific to USFS RFSS on NFS lands will be addressed through the NEPA environmental review. In addition, general avoidance and mitigation measures described for wildlife species in Section 6.11.2.1 would also benefit USFS RFSS. North Plains will implement the proposed avoidance, minimization, and mitigation measures found in the CMRP, including the Invasive and Noxious Species Management Plan, SWPPP, Spill Prevention and Response Plan, and MBTA Compliance Plan to minimize impacts to USFS RFSS.

6.11.2.3 Migratory Birds

Given the Project-wide availability of suitable grassland, shrub-scrub, and forested habitats, the Project may affect migratory birds during both construction and operation.

Direct effects during construction may include mortality or injury from vehicle collisions or inadvertent destruction of ground nests. Additional effects include short-term displacement due to noise and activity, and the loss or alteration of habitat through vegetation removal or forest conversion within the Project right-of-way. During operation, the primary risk to migratory birds is

collision with overhead transmission lines. Collision risk varies by species and is influenced by local habitat features, line orientation, bird morphology, and bird flight behavior.

To reduce potential effects on avian species, the North Plains will implement a Project-specific MBTA Compliance Plan to document the measures the Project has implemented or will implement to avoid, minimize, and mitigate effects on migratory birds, including bald and golden eagles, consistent with both the MBTA and the BGEPA. The MBTA Compliance Plan identifies potential risks to migratory birds, including raptors, rookeries or heronries, and federally protected species. It summarizes relevant survey results and agency data, outline conservation measures tailored to specific species or nest sites and describe the approach for responding to new sensitive nest discoveries prior to construction. The MBTA Compliance Plan will also consolidate agency input and Project commitments, including guidance from Suggested Practices for Avian Protection on Power Lines (APLIC, 2006) and Reducing Avian Collisions with Power Lines (APLIC, 2012), as well as applicable state and species-specific restrictions, monitoring protocols, and mitigation measures identified during NEPA coordination and Project permitting.

The MBTA Compliance Plan focuses on the conservation measures the Project will implement during the Project siting and design, construction, and reclamation phases to reduce potential impacts to migratory birds (see Attachment G of the CMRP in Appendix G). The MBTA Compliance Plan is also intended to facilitate the development of an operations-focused Avian Protection Plan at a later date.

Additionally, to the extent feasible, North Plains will conduct ground- or vegetation-disturbing construction activities (e.g. vegetation clearing, tree trimming, overland travel, grading and excavation, etc.) within uncultivated or undeveloped habitats (e.g., grasslands, forests, and shrublands) between August 1 – April 14, to avoid Project impacts within the general migratory bird nesting season (April 15 – July 31; NDGFD, 2025d; MacDonald et al., 2024). If ground- or vegetation-disturbing construction activities cannot occur outside of the general migratory bird nesting season, North Plains will conduct nest clearance surveys (i.e., nest searches) in the affected area no more than seven days prior to the ground- or vegetation-disturbing construction activities. If active nests are found during pre-construction nest surveys, North Plains will implement avoidance and/or limited work buffer(s) around the nest until after chicks fledge or the nest fails. The buffer distance(s) would be determined based on local topography, vegetative buffers, and species or individual tolerance to disturbance. Further information can be found in the MBTA Compliance Plan.

As part of the Project's minimization strategy, North Plains conducted an avian collision risk assessment to identify locations where line markers may be beneficial to reduce avian collision risk. As a result, North Plains will install bird flight diverters in four areas near sensitive migratory bird habitats, such as perennial streams and protected wildlife areas totaling approximately 15.1 miles of the Project OPGW. Power line marking is also currently planned within the 75 percent and 50 percent whooping crane migration corridors, which will overlap approximately 5.8 miles of the migratory bird line marking area and encompass several additional perennial waterbody crossings. This approach aligns with the January 23, 2025, agency response letter from the NDGFD (provided in Appendix J-2) and applicable guidance from APLIC. The installation of bird flight diverters increases the visibility of transmission line OPGW within high-use, low--altitude flight corridors and is an established practice to minimize bird collision risk in the United States. Discussions with the USFWS regarding final diverter use and placement are ongoing and will be addressed in the MBTA Compliance Plan.

6.11.2.4 Raptors and Eagles

Though no eagle nests were confirmed within the Study Area, nests consistent in size and structure with an eagle nest (i.e., potential bald or golden eagle nests) were observed within the Study Area, as were raptor nests. As such, the Project may affect raptors and eagles during both construction and operation.

Potential impacts to raptors and eagles are similar to those described for migratory birds (see Section 6.11.2.3). During active construction, raptors and eagles may be less likely to nest or utilize the area surrounding the Project due to noise and general disturbance within the Project workspace and right-of-way as a result of equipment operation, including blasting, excavation, and line stringing. Eagles in the immediate area will likely relocate foraging and nesting activities to nearby suitable habitat for the duration of construction activities. Impacts on bald and golden eagles and other raptors as a result of Project construction are anticipated to be temporary.

The 2024 Eagle Rule follows the permitting approach previously defined in the National Bald Eagle Management Guidelines (USFWS, 2007b) to create a general permit option and authorize bald eagle nest disturbance take associated with eligible activities (50 CFR 22.280 [2024]). Under the 2024 Eagle Rule, a general permit may be obtained for certain project activities, including linear infrastructure construction and maintenance within 660 feet of a bald eagle nest, aircraft operation (including helicopters and fixed-wing aircraft) within 1,000 feet of an in-use bald eagle nest, and blasting within 0.5 mile of an in-use bald eagle nest.

Per the 2024 Eagle Rule, activities occurring beyond these buffer distances are unlikely to cause disturbance to bald eagles, and do not require a permit. If construction and/or blasting are necessary within these bald eagle nest buffer distances, North Plains will implement time-of-year restrictions to reduce impacts and/or will coordinate with USFWS to seek a disturbance permit. Based on Project surveys in 2022 and 2023, no active bald eagle nests were documented within 0.5 mile of the Project workspace. Prior to the start of construction, North Plains will conduct an additional raptor nest survey to identify any new eagle nests near the Project that may warrant permitting.

Golden eagle nest disturbance does not qualify for a general permit and would instead use a specific permit to authorize disturbance. Based on the 2024 Eagle Rule and coordination with USFWS to date, North Plains will typically seek a disturbance permit if construction or blasting are required within 0.5 mile of a golden eagle nest or potential golden eagle nest. Additionally, North Plains will coordinate with USFWS to evaluate golden eagle and potential golden eagle nests within 0.5 mile to 1 mile of Project activities on a nest-specific basis. Based on the 2022 and 2023 raptor nest surveys, no golden eagle nests are located within 0.5 mile of Project workspace. However, there are four nests consistent in size and structure to an eagle nest are located within 0.5 mile of Project workspace that may warrant permitting.

The Project has implemented or will implement measures to avoid and minimize potential effects on bald and golden eagles, consistent with the BGEPA, will be outlined in the MBTA Compliance Plan described in Section 6.3.3 (see Attachment G of the CMRP in Appendix G). Additionally, an Eagle Management Plan is in development to support eagle permitting and further guide nest-specific avoidance, minimization, and mitigation efforts. North Plains will also implement the Blasting Plan (see Attachment C of the CMRP), in accordance with industry accepted standards, applicable regulations, and permit requirements, to minimize impacts on raptors and eagles.

6.11.2.5 Prairie Grouse

Sharp-tailed Grouse

Given the availability of grassland habitat and presence of sharp-tailed grouse within the Study Area, sharp-tailed grouse may be affected by Project construction and operation.

According to the NDGFD agency response letter dated January 23, 2025 (provided in Appendix J-2), structure siting should be avoided in nesting habitats within a 1-mile buffer of any prairie grouse lek, and construction within these buffer zones should be restricted during the lekking and nesting seasons (March 15 to July 15). According to the NDGFD's general information on sharp-tailed grouse habitat, nesting habitat is generally located in grassland vegetation in uncultivated areas (NDGFD, 2025b).

Due to the number and distribution of the sharp-tailed grouse leks along the Project, structure siting within 1 mile of sharp-tailed grouse leks could not be fully avoided. Eighteen sharp-tailed grouse leks are located within 1 mile of Project structures.

No documented leks are located within the Project workspace or right-of-way. Additionally, North Plains minimized impacts to 5 of the 18 leks within 1 mile of Project structures by siting Project structures in cropland or already fragmented and isolated grasslands and by co-locating structures with existing roads. For the remaining 13 leks where Project structures are sited within potential sharp-tailed grouse nesting habitat, North Plains has developed proposed measures to minimize potential impacts in coordination with the NDGFD.

- North Plains will restrict construction activity in grasslands within 1 mile of each sharp-tailed grouse lek between March 15 to July 15. North Plains may continue ongoing work within a given lek buffer during this period if construction activity began prior to March 15; however, no new construction will be initiated within buffers that remain undisturbed at the start of the lekking and nesting season. North Plains will not apply the timing restriction within non-grasslands, such as croplands, since croplands do not provide suitable nesting habitat.

- If adherence to the March 15 to July 15 activity restriction is not possible within a specific lek buffer, North Plains would avoid construction activity within 0.25 mile of the lek from 30 minutes before sunrise until 10 a.m. between March 15 and May 1 to minimize disturbance to lekking grouse, prohibit blasting within 1 mile of the lek between March 15 and July 15, and monitor for sharp-tailed grouse presence during construction activities within the buffer. Potential activities that may warrant this exception include mandatory compliance-related and/or minimally disturbing activities such as site inspections, equipment retrieval, and installing or fixing erosion control measures.

- If greater schedule flexibility and/or more involved construction activities are necessary within a particular lek buffer, North Plains would minimize Project impacts within the lekking and nesting seasons as follows:

    - Between March 15 and May 1, North Plains would avoid construction activities within 0.25 mile of the lek from 30 minutes before sunrise to 10 a.m. to minimize disturbance to lekking sharp-tailed grouse. Construction

may proceed within 0.25 mile of the lek after 10 a.m. during the lekking season.

- Between May 1 and July 15, North Plains would conduct nest clearance surveys on grasslands within the potential construction area plus a 100-foot buffer to minimize impacts to nesting sharp-tailed grouse. If nest clearance surveys confirm nesting grouse are not present, construction would proceed within the surveyed area.

In addition, North Plains will adhere to regulatory requirements and follow Project plans such as the CMRP and MBTA Compliance Plan (see Attachment G of the CMRP in Appendix G), to minimize impacts to sharp-tailed grouse.

Greater Sage-grouse

The Project has been sited to avoid active greater sage-grouse leks, and no active leks are located within 2 miles of the Project Route in North Dakota. In accordance with NDGFD recommendations, the greater sage-grouse PCA was considered during Project development, and the Project Route was sited to avoid the PCA. Approximately 3.6 acres of temporary Project workspace overlap top edge of the PCA, including both NFS and privately owned lands. Though greater sage-grouse may be affected by construction noise and activity, if present, impacts are unlikely due to the lack of active greater sage-grouse leks near the Project.

7.0 STAKEHOLDER ENGAGEMENT

Core to North Plains' development philosophy is the integration of stakeholder input prior to officially entering the regulatory process. North Plains has engaged federal, state, Tribal, and local stakeholders throughout the development of the Project to incorporate feedback into Project siting. The North Plains Project team consists of North Plains Connector LLC and their representatives, including Merjent Inc. (Merjent), Western EcoSystems Technology, Inc. (WEST), TRC Companies, Inc. (TRC), Environmental Consultants, Inc (ECI), and private consultants.

Starting in the fall of 2021, North Plains initiated agency coordination efforts to ensure effective collaboration and communication with various governmental agencies. These agencies include state, federal, and local authorities responsible for overseeing environmental regulations and land management. The initial meetings served as introductions, allowing North Plains to establish connections, provide an overview of the Project, and discuss the Project objectives and scope. As Project development progressed, subsequent meetings delved deeper into specific topics, such as environmental impact statement, permitting, and compliance requirements. These ongoing stakeholder coordination efforts have been crucial in fostering a cooperative environment and ensuring that the Project is in compliance with the relevant regulations and guidelines. North Plains anticipates that stakeholder coordination will continue throughout Project development to maintain open lines of communication, address any concerns or challenges, and seek necessary approvals and permits to ensure regulatory compliance.

7.1 PROJECT NOTIFICATION LETTERS

In December 2024, North Plains distributed Project notification letters to federal, state, and local agencies and stakeholders identified in NDAC Section 69-06-01-05. These letters provided a detailed overview of the Project, requested information concerning any sensitive resources,

ongoing or planned development, or property interests within 1-mile of the Project Route that the agency may possess, asked for relevant permits, and enclosed a Study Area map.

Table 7.1-1 below details the specifics of the Project notification exchange between the North Plains Project team and the agencies identified in NDAC Section 69-06-01-05. Appendix J contains a template of the Project notification letter and copies of any agency correspondence received up to the present date.

TABLE 7.1-1

Project Notification Details

Agency Per NDAC 69-06-01-05	Letter Sent	Response Received	Section Addressed
North Dakota Aeronautics Commission	December 23, 2024	No response	NA
North Dakota Attorney General	December 23, 2024	No response	NA
North Dakota Department of Agriculture	December 23, 2024	No response	NA
North Dakota Department of Health	December 23, 2024	No response	NA
North Dakota Department of Human Services	December 23, 2024	No response	NA
North Dakota Department of Labor and Human Rights	December 23, 2024	No response	NA
North Dakota Department of Career and Technical Education	December 23, 2024	No response	NA
North Dakota Department of Commerce	December 23, 2024	No response	NA
Energy Infrastructure and Impact Office	December 23, 2024	No response	NA
North Dakota Game and Fish Department	December 23, 2024	January 23, 2025	Section 7.2.3
North Dakota Industrial Commission	December 23, 2024	No response	NA
North Dakota Office of the Governor	December 23, 2024	No response	Section 7.2.12
North Dakota Department of Transportation	December 23, 2024	No response	NA
State Historical Society of North Dakota	December 23, 2024	January 2, 2025	Section 7.2.15
North Dakota Indian Affairs Commission	December 23, 2024	No response	NA
Job Service North Dakota	December 23, 2024	No response	NA
North Dakota Department of Trust Lands	December 23, 2024	No response	Section 7.2.5
North Dakota Parks and Recreation Department	December 23, 2024	January 7, 2025	Section 7.2.10
Natural Resources Conservation Service	December 23, 2024	January 25, 2025	Section 7.2.11
North Dakota Department of Water Resources	December 23, 2024	January 23, 2025	Section 7.2.7
United States Department of Defense	December 23, 2024	No response	NA
United States Fish and Wildlife Service	December 23, 2024	No response	Section 7.2.3
United States Army Corps of Engineers	December 23, 2024	No response	Section 7.2.6
Federal Aviation Administration	December 23, 2024	No response	NA
Oliver County	December 23, 2024	No response	Section 7.2.17
Morton County	December 23, 2024	No response	Section 7.2.17
Grant County	December 23, 2024	No response	Section 7.2.17
Hettinger County	December 23, 2024	No response	Section 7.2.17
Slope County	December 23, 2024	No response	Section 7.2.17
Golden Valley County	December 23, 2024	No response	Section 7.2.17
North Dakota Transmission Authority	December 23, 2024	December 11, 2025	Section 7.2.13
North Dakota Pipeline Authority	December 23, 2024	No response	NA
North Dakota Department of Environmental Quality	December 23, 2024	January 9, 2025	Section 7.2.8
North Dakota Geological Survey	December 23, 2024	December 30, 2024	Section 7.2.9
North Dakota Forest Service	December 23, 2024	No response	No response
Bureau of Land Management	December 23, 2024	January 6, 2025	Section 7.2.4
Military Aviation and Installation Assurance Siting Clearinghouse	December 23, 2024	No response	NA
91st Missile Maintenance Squadron	December 23, 2024	No response	NA
Minot Air Force Base	December 23, 2024	No response	NA

TABLE 7.1-1

Project Notification Details

Agency Per NDAC 69-06-01-05	Letter Sent	Response Received	Section Addressed
Grand Forks Air Force Base	December 23, 2024	No response	NA

7.2 STAKEHOLDER CORRESPONDENCE SUMMARIES

The following sections provide high-level summaries of stakeholder outreach activities conducted throughout the development of the Project. To streamline documentation, stakeholders are grouped together when correspondence involves multiple groups with similar interests, roles, or regional affiliations. Each section includes a discussion of the specific objectives of the coordination, information sought, and collaborative efforts undertaken. Furthermore, each section includes a discussion of how the Project addressed any specific recommendations received during the outreach process.

Stakeholder meetings were conducted through both in-person sessions and virtual platforms and supported by ongoing email communications that facilitated discussions, updates, and clarifications throughout the development of the Project. Appendix J contains copies of stakeholder correspondence, meeting notes, and other correspondence received to date.

7.2.1 U.S. Department of Energy

The DOE became the lead federal agency under NEPA in July 2023, and North Plains has coordinated with the DOE through the Grid Deployment Office (GDO) since then. The DOE GDO leads efforts to modernize and upgrade the U.S. electrical grid.

The DOE issued a NOI to Prepare an Environmental Impact Statement (EIS) for the Project on October 25, 2024 (DOE, 2024). The NOI identified that an EIS will be prepared, provides dates for public scoping meetings, and provided information on how to submit formal comments to DOE. Scoping meetings were held by the DOE in November 2024. The scoping period ended on December 9, 2024. Please see Section 7.2.22 for more details on the public scoping meetings.

North Plains is regularly corresponding with DOE and the cooperating agencies to fulfill requirements of the environmental review under NEPA (see Section 2.6). The DOE issued the Draft EIS for public comment on the North Plains Connector on January 9, 2026.

7.2.2 U.S. Forest Service

North Plains began coordinating with the USFS in October 2021 due to the Project's planned crossing of USFS-managed land within the Dakota Prairie Grasslands in North Dakota. Detailed records of meeting notes and significant correspondence are included in Appendix J-1, with a summary of key meetings and communications outlined below.

October 12, 2021 – Meeting summary between USFS, BLM North Dakota Field Office (NDFO), and North Plains: North Plains met with the USFS and BLM NDFO to formally introduce the Project and its development team. The USFS recommended routing in higher numbered management areas and to exclude areas in the LMRP listed as Suitable for Wilderness, nonmotorized backcountry recreation, RNAs, Inventoried Roadless Areas, and areas containing ponderosa pines. The USFS also recommended consulting with the Standing Rock Sioux Tribe and the Three Affiliated Tribes of the Fort Berthold Reservation. The Right-of-Way application

was also discussed, with the USFS providing recommendations on the application process. See Section 7.2.4 for a summary of BLM coordination.

January 27, 2022 – Meeting summary between USFS and North Plains: North Plains stated they were developing a revised route east of NFS land that would avoid more populated areas. The USFS expressed the need for visual analysis from specific vantage points, including the Little Missouri River scenic area, Maah Daah Hey trail, and ponderosa pine stands. The USFS highlighted *Townsendia* as a plant species of concern which will require surveys. They clarified that these surveys are only needed on NFS land. To help avoid potential reroute issues later, the USFS also suggested widening the survey corridor through NFS land, typically to about 1,000 feet in width.

Potential wildlife mitigation strategies were discussed, including limitations on tree cutting, timing restrictions for construction, and areas designated as no surface occupancy for nests of certain raptor species and sage grouse leks. Construction avoidance areas for sensitive plants were also identified. The USFS recommended avoiding the southern route alternative due to potential impacts on paleontological resources and sage grouse and the need to comply with the LRMP and avoid areas where transmission rights-of-way are restricted. The USFS recommended following a more northern route to collocate areas with existing disturbances.

April 4, 2022 – Meeting summary between USFS and North Plains: North Plains mentioned they were incorporating feedback from landowners regarding the route. North Plains stated they were actively pursuing option agreements with landowners, intending not to tie up lands in easements during permitting. Instead, they plan to execute easements once regulatory approval is received.

May 17, 2023 – Meeting summary between USFS, Montana agencies, and North Plains: North Plains discussed the potential for the DOE to act as a co-lead agency if deemed beneficial for the Project, as DOE is actively seeking projects suitable for its new program. North Plains stated their goal is to procure HVDC equipment by mid-2025, contingent on obtaining permits and stakeholder certainty. North Plains anticipated completing aerial lek/raptor surveys and USFS rare plant species assessments by 2023, with on-the-ground field surveys slated to commence in early June 2023. Tribal surveys would encompass all lands (private and federal), and field surveys would focus solely on the preferred route.

North Plains has sited the Project according to the LRMP and will follow the right-of-way requirements outlined in the USFS SUP, once received. North Plains is regularly corresponding with DOE and the USFS, as a cooperating agency, to fulfill requirements of the environmental review under NEPA (see Section 2.6).

7.2.3 Wildlife Agencies (North Dakota)

North Plains initiated collaboration with NDGFD and USFWS, collectively the North Dakota wildlife agencies, in September 2021 as part of its commitment to regulatory compliance. Through a series of meetings and iterative reviews of Project information, the agencies provided insight regarding appropriate resource surveys and protocols, as well as strategies to avoid, minimize, and monitor potential impacts, including the integration of adaptive management strategies. This collaborative effort contributed to refining the Project and developing the preliminary Project layout. Detailed records of meeting notes and significant correspondence are included in Appendix J-2, with a summary of key meetings and communications outlined below.

September 30, 2021 – Meeting summary between NDGFD and North Plains: North Plains met briefly with the NDGFD. The meeting included sharing the Project development philosophy and plans for a kick-off meeting with both the NDGFD and USFWS.

October 13, 2021 – Meeting summary between NDGFD, USFWS NDFO, and North Plains: During the meeting, both agencies emphasized the importance of strategic avoidance and minimization of impacts to wildlife. Both agencies appreciated the early coordination efforts but requested more detailed information such as routes and physical structures to provide specific feedback. It was recommended to follow APLIC guidelines for appropriate wildlife management practices, including locating structures outside of high-quality habitat.

The focus of discussion primarily centered around greater sage-grouse and Dakota skipper, highlighting the need to identify PCAs and native habitats for the grouse and conduct habitat assessments for the Dakota skipper. Co-location was suggested as the best option where feasible, and both agencies expressed willingness to participate in the review of study plans, starting with habitat-level assessments and progressing to targeted surveys as needed. The NDGFD preferred avoiding high-quality native grassland habitats whenever possible.

January 28, 2022 – Meeting summary between NDGFD, USFWS NDFO, and North Plains: There was a positive response from both agencies to the Project route at that time, particularly regarding the avoidance of greater sage-grouse PCAs. Both agencies requested more clarity regarding the lead federal agency, particularly the involvement of Western Area Power Administration, as a federal nexus would result in Section 7 consultation. A general description of survey protocols was shared, and both agencies agreed that the approach was appropriate.

USFWS confirmed the importance of conducting a Dakota skipper habitat assessment as the first step, emphasizing the need to identify presence/absence after initial surveys and planning. USFWS also highlighted various species with upcoming listing decisions that should be considered due to the extended Project timeline and recommended a whooping crane risk assessment along with future planning considerations.

NDGFD expressed confidence in the locations of greater sage-grouse leks and noted that the agency closely tracks lek status, indicating that specific surveys for these areas may not be necessary. NDGFD recommended sharp-tailed grouse lek surveys and highlighted the higher quality of grasslands near the North Dakota/Montana state line, suggesting micro-siting as appropriate to minimize disturbance.

December 7, 2022 – Meeting summary between NDGFD, USFWS NDFO, and North Plains: North Plains provided a summary of the status and results of aerial and ground surveys conducted in 2022. Special status species, including federally listed, federally protected, and state species of concern, were discussed, and a confirmed list of species potentially present in the Project was reviewed. Conservation strategies, avoidance, and minimization efforts for species such as the whooping crane, northern long-eared bat, little brown bat, Dakota skipper, bald and golden eagles, and migratory birds were thoroughly discussed. NDGFD recommended implementing a 0.25-mile buffer around Otter Creek WMA to prevent construction impacts.

June 6, 2023 – Meeting summary between USFWS Montana Field Office (MTFO) and NDFO and North Plains: The meeting was primarily focused on bat surveys and Dakota skipper conservation measures. North Plains provided an update on the bat survey and study plan adjustments USFWS stated that they were not aware of any hibernacula near the Project. USFWS requested

more manual vetting of acoustic calls to avoid false negatives, especially those misclassified as *Myotis* spp. and *M. evotis*.

USFWS requested specific conservation measures for reproductive versus foraging habitat. North Plains stated that if avoidance of reproductive habitat proved unfeasible, site-specific conservation measures may be required.

February 16, 2024 – Meeting summary between NDGFD, USFWS, DOE, and North Plains: North Plains discussed route adjustments made to avoid sensitive areas based on field surveys and to accommodate landowner preferences during land acquisition. North Plains provided an update regarding the progress and expected timelines for major federal and state permits. North Plains also provided a summary of the 2023 survey results, covering raptor surveys, wetland/waterbody and general habitat mapping surveys, Dakota skipper reproductive and foraging habitat surveys, and bat surveys. Additionally, in-depth discussions occurred regarding the conservation measures and habitat assessments for whooping crane, northern long-eared bat, little brown bat, Dakota skipper, and unbroken grassland.

July 11, 2024 – Meeting summary between the USFWS, DOE, and North Plains: The meeting was primarily focused on the eagle permitting for the Project. North Plains provided an update on the Project, reviewing the NEPA schedule and confirming that initial eagle nest surveys were completed in 2022 and 2023. The USFWS confirmed that a 0.5-mile buffer for blasting applies to both Golden Eagles and Bald Eagles, and the Eagle Management Plan should include relevant USFWS staff for consolidated comments. Additionally, there will be preconstruction eagle nest surveys conducted prior to the start of construction. The USFWS emphasized the importance of effective communication and documentation regarding disturbance estimates to maintain compliance with eagle disturbance permit conditions.

August 19, 2024 – Meeting summary between USFWS, DOE, and North Plains: The meeting was primarily focused on whooping cranes including potential impacts and conservation measures. Collision mortality modeling indicated a low incidence of whooping crane fatalities from transmission lines, estimated at approximately 0.5 cranes per year. The Stopover Habitat Suitability assessment showed that whooping cranes are more likely to utilize adjacent habitats rather than the project areas. Proposed conservation measures included installing bird flight diverters on overhead shield wires and stopping work if whooping crane are sighted within 1 mile during construction. The preliminary determination suggested that the Project is not likely to adversely affect whooping crane; however, USFWS requires a complete Project description for a final assessment.

December 19, 2024 – Meeting summary between USFWS MTFO and NDFO, NDGFD, DOE, Montana state wildlife agency, and North Plains: North Plains presented the 2024 survey results to the wildlife agencies. The survey results included a summary of USFS plant surveys, wetland/waterbody surveys, general habitat surveys, Dakota skipper surveys, and bat surveys.

January 23, 2025 – NDGFD response to notification letter: The NDGFD raised concerns related to the potential impacts of the transmission line and associated access roads on native prairie, wetlands, fisheries, and wildlife habitats. They emphasized the importance of avoiding native prairie areas to protect grassland species and conserving large, contiguous tracts of habitat. They also recommended avoiding alterations to wetland areas, protecting fisheries such as the Heart River, Cannonball River, and Little Missouri River, and minimizing avian impacts from overhead lines. Furthermore, they advised avoiding construction near WMAs and implementing buffer zones around prairie grouse leks and active raptor nests. They noted that, with the appropriate

mitigation measures, the Project is unlikely to have significant adverse effects on wildlife or wildlife habitat.

March 20, 2025 – Meeting summary between USFWS MTFO and NDFO, DOE, and North Plains: The meeting covered Project updates and species analysis with preliminary determinations for Dakota skipper, western regal fritillary, monarch butterfly, bumble bees, pallid sturgeon, whooping crane, piping plover, rufa red knot, northern long-eared bat, little brown bat, and tricolored bat.

April 3, 2025 – Meeting summary between NDGFD and North Plains: The meeting was held to confirm that North Plains' response to the notification letter aligns with NDGFD recommendations. Topics discussed included minimization, avoidance, and restoration of native prairie / unbroken grasslands; wetland impacts and compliance with NWP 57; avian impact minimization; avoidance of WMAs; prairie grouse lek avoidance; and general discussion of raptor nests.

The Project prioritized the avoidance of unbroken grasslands and wetland areas by siting structures, roads, and infrastructure on previously disturbed lands whenever possible. Per discussion, permanent workspaces within unbroken grasslands and wetlands account for a very small total acreage. Temporary workspace impacts are larger but may overestimate loss of unbroken grassland. The Project's CMRP includes specific measures related to seedbank and rootstock retention, noxious weed management, and pollinator-friendly weed-free seed mixes during construction and/or post-construction restoration. The Project will further minimize impacts to wetlands by applying timber matting in temporary workspaces.

North Plains will implement the MBTA Compliance Plan to minimize Project impacts according to the recommendations outlined in APLIC (2012). To reduce avian collision risk, the Project will install bird flight diverters at overhead lines in several sensitive areas in North Dakota, including the 75 percent whooping crane migration corridor and across several waterbodies, as described in the MBTA Compliance Plan. The NDGFD requested the HVDC Transmission Line be sited at least 0.25 mile from the edge of Otter Creek WMA to avoid indirect impacts to the WMA, which North Plains has incorporated into the Project Route.

North Plains has avoided siting structures within the recommended 2-mile buffer of greater sage-grouse leks. Siting within the recommended 1-mile buffer of sharp-tailed grouse leks has also been avoided, where practicable; however, leks were widely distributed within Golden Valley, Sope, Hettinger, Grant, and Morton counties based on Project surveys. North Plains proposed seasonal restrictions on new construction activities within grasslands in the recommended 1-mile buffer during the lekking and nesting seasons (March 15 to July 15), or daily timing limitation, blasting restrictions, and biological monitoring during construction if added flexibility is necessary within a specific lek buffer.

Surveys for raptor nests were conducted in 2022 and 2023 and will be repeated prior to construction. North Plains is coordinating with USFWS regarding eagle nest disturbance permits and will implement construction activity buffers around active eagle nests to align with USFWS guidelines and the Project's Eagle Management Plan (in development).

On private lands, North Plains will utilize a NRCS-approved weed-free, native prairie seed mix to restore areas of unbroken grassland, unless otherwise required by landowner agreements and approved by the Commission.

December 22, 2025 – Meeting summary between NDGFD and North Plains: North Plains met with NDGFD PLOTS staff to discuss where the Project Route crosses PLOTS agreements. North Plains agreed to provide the Project Route for NDGFD review.

January 12, 2026 – Meeting between NDGFD and North Plains: North Plains met with NDGFD biologists to provide Project updates and follow up on the agency's recommendations for unbroken grasslands, sharp-tailed grouse, and migratory birds, which were previously discussed on April 3, 2025.

North Plains provided updated acreages describing potential temporary and permanent impacts to unbroken grasslands within Project workspaces and discussed the Project's proposed measures to reduce impacts during construction and post-construction restoration. Per the discussion, temporary impacts on private lands will be restored using native prairie seed mixes, where possible; the seed mixes will be identified in coordination with NRCS closer to Project construction. NDGFD recommended restoring 13 acres of grassland habitat as mitigation to offset the unbroken grassland acreage lost due to permanent Project infrastructure. NDGFD confirmed that the Project's plans to reseed and restore areas with construction ground disturbance sufficiently addressed the NDGFD's restoration recommendation (see Section 6.10.2.1).

For sharp-tailed grouse, a total of 18 leks are within 1 mile of Project structures. North Plains presented the results of a desktop review to evaluate potential nesting habitat and structure placement within 1 mile of these leks. For 5 of these leks, structures were sited in croplands, co-located with existing roads, or placed within already fragmented or isolated grasslands. NDGFD acknowledged that while grouse can occur at roadsides, this approach appropriately minimizes impacts at these leks. For the remaining 13 leks, North Plains will implement construction activity restrictions to minimize potential impacts, as discussed in Section 6.11.2.5.

In the January 2025 letter, NDGFD recommended line marking to minimize avian impacts. North Plains expanded on the April line marking discussion, summarizing the Project's avian collision risk analysis and showing a map of the locations where line marking is proposed in North Dakota. The group briefly discussed perch deterrents, and North Plains discussed the limited usefulness of perch deterrents on a project of this size, particularly when the conductors may be used for perching. Instead, the Project will primarily install monopole structures to provide less opportunity for perching and nesting. NDGFD concurred with this approach. Additional perch deterrent discussion and measures relevant to Project siting, design, construction, and reclamation are discussed in the MBTA Compliance Plan, which was provided to NDGFD in November 2025 (see Section 6.11.2.3). An Avian Protection Plan specific to Project operations will be developed prior to commercial operation.

Additional topics discussed included public use of access roads and tree and shrub replacement. NDGFD noted that some shrub species provide important winter habitat for sharp-tailed grouse, and retaining or replanting those species would be preferred, where possible.

Through the measures discussed above, the Project will address the NDGFD's recommendations and minimize potential impacts on wildlife and wildlife habitat. Through the Section 7 Consultation process during the NEPA environmental review, North Plains will comply with conservation measures required by USFWS to avoid, minimize, and mitigate potential impacts to species listed in the ESA.

7.2.4 Bureau of Land Management (North Dakota)

North Plains began coordinating with the BLM NDFO in October 2021 due to the Project's planned crossing of BLM-managed land in Montana. Detailed records of meeting notes and significant correspondence are included in Appendix J-3, with a summary of key meetings and communications outlined below.

October 12, 2021 – Meeting summary between USFS, BLM NDFO, and North Plains: North Plains met with the BLM NDFO and USFS to formally introduce the Project and its development team. Of the routes presented by North Plains, both agencies preferred the more southern routes. The agencies note the need to coordinate with the NDGFD regarding sage grouse, that crossing the Little Missouri River on federal land would be challenging, and paleontological survey will be required on federal lands south of Interstate 94.

January 6, 2025, to March 25, 2025 – Email correspondence between BLM NDFO and North Plains: On January 6, 2025, BLM NDFO emailed North Plains in response to the Project notification letter. The email requested a shapefile or legal land descriptions for the Project to review further. On February 10, 2025, North Plains provided GIS shapefiles of the route and study area as shown on the map attached to the Project notification letter. BLM NDFO confirmed receipt of the GIS shapefiles and that the Project avoids BLM lands in North Dakota.

The Project avoids BLM lands in North Dakota and no additional coordination with the BLM NDFO is required.

7.2.5 North Dakota Department of Trust Lands

North Plains has been coordinating with the NDDTL because the Project is proposed to cross multiple NDDTL-managed tracts. To secure an easement across these tracts, survey work is required, and a conveyance document signed by the NDDTL Commissioner. In selecting the Project Route, North Plains considered the factors NDDTL considers when evaluating applications for easements across NDDTL-managed tracts, including financial benefits to the trusts, environmental impact mitigation, future land use considerations, and spatial alignment with section lines and corridors. Records of meeting notes are included in Appendix J-4, with a summary of key meetings and communications outlined below.

September 29, 2021 – Meeting summary between NDDTL and North Plains: North Plains met with the NDDTL to formally introduce the Project. The meeting focused on introductions and establishing who is the main point of contact for the NDDTL.

May 3, 2022 – Meeting summary between NDDTL and North Plains: North Plains provided an overview of the Project, including sharing overview maps of the NDDTL tracts that the Project proposes to cross. Initially, NDDTL did not express any concerns. The meeting also involved discussions on the NDDTL Right-of-Way application and Survey Permit process related to the Project.

July 18, 19, and 20, 2022 – Onsite visit summary between NDDTL and North Plains: North Plains and NDDTL met in the field to review the proposed route across six separate NDDTL tracts. During the meeting, the NDDTL provided a variety of comments specific to each tract, including suggestions to shift the route and avoid particular areas. Overall, the discussions focused on optimizing the route alignment to minimize impacts on the NDDTL tracts.

August 5, 2022 – Dialogue summary between NDDTL and North Plains: NDDTL confirmed that there are no paleontological localities located within the NDDTL tracts that the Project proposes to cross and recommended monitoring if disturbing Paleocene rocks.

December 22, 2022 – Dialogue summary between NDDTL and North Plains: North Plains and NDDTL discussed the 2022 field survey results.

May 31, 2023 – Onsite visit summary between NDDTL and North Plains: Onsite visit with NDDTL to discuss new route locations across NDDTL tracts that were added after the 2022 survey season. NDDTL requested a reroute during the onsite visit, which North Plains was able to accommodate following an engineering review.

November 28, 2023 - Dialogue summary between NDDTL and North Plains: North Plains and NDDTL discussed the 2023 field survey results.

July 18, 2024 – Onsite visit summary between NDDTL and North Plains: Onsite visit with NDDTL to discuss new route locations across NDDTL tracts that were added after the 2023 survey season. NDDTL requested two different access road shifts in order to provide better access to the Project right-of-way. North Plains was able to accommodate these shifts following an engineering review.

Prior to conducting field work, all companies representing North Plains obtained the necessary Planning and Preconstruction Survey permit. North Plains considered all requested route shifts by NDDTL to the extent possible, while also considering other site-specific constraints. At the request of NDDTL, North Plains will secure a right-of-way easement from NDDTL following issuance of the Certificate and Route Permit.

7.2.6 U.S. Army Corps of Engineers

North Plains began coordinating with the USACE during Project development to discuss permitting recommendations and wetlands and other waters' BMPs to implement on the Project. Detailed records of meeting notes and significant correspondence are included in Appendix J-5, with a summary of key meetings and communications outlined below.

November 28, 2023 – Meeting between USACE, DOE, and North Plains: North Plains met with the USACE North Dakota Regulatory Office and the DOE. North Plains emphasized the design goal of minimizing impacts to wetlands and water bodies, aiming to position structures outside of these areas wherever possible. Regarding the Clean Water Act permitting strategy, North Plains discussed the approach considering the small size of anticipated impacts and the likely jurisdictional status of streams. North Plains plans to utilize Preliminary Jurisdictional Determination (PJD) due to these factors and intends to operate within the permit conditions outlined in NWP 57, aligning with design goals.

North Plains has designed the Project to avoid wetlands and other waterbodies to the extent possible. North Plains is preparing a PCN to submit to USACE for wetlands and waterbodies where avoidance is not possible. North Plains will follow the NWP conditions stipulated by USACE.

June 6, 2024, to June 21, 2024 – Call between USACE and North Plains: North Plains provided the USACE North Dakota Regulatory Office with information on the Project schedule. Also, informed the USACE that North Plains is working with the DOE on NEPA review and anticipate

submittal application materials to the DOE in early 2025. North Plains informed the USACE that they plan to start wetland and waterbody surveys in the summer of 2024 and that the permit application would be prepared in late fall for submittal in early 2025. USACE confirmed that they received the information and had no questions at the time.

June 5, 2025 – Meeting between USACE and North Plains: North Plains held a pre-application meeting with USACE North Dakota Regulatory Office to discuss Project updates and details for the anticipated PCN filing. Discussed when North Plains anticipates PCN submittal, conclusion of Section 7 and 106 processes, and conclusion of NEPA review. The group discussed the USACE's approach to Executive Order 14156, which requires that the USACE process applications within 30 days. USACE suggested marking the PCN as "Draft" if it is submitted in summer 2025, since the draft would not need to be entered into the system that tracks the 30-day review period. Additionally, the USACE suggested that North Plains wait until the new NWP are issued in the spring of 2026. Prior to submitting the PCN, the USACE requested that North Plains call them for further discussion.

October 3, 2025 – Meeting between USACE and North Plains: North Plains met with the USACE North Dakota and Montana Regulatory Offices to discuss CWA and Montana state-level permits. Montana-specific information is not further discussed. The USACE (North Dakota) requested draft submittal in January 2026. North Plains agreed to submittal in winter 2026. The group discussed the USACE Regulatory Request System. The North Dakota USACE recommended submitting the draft application directly to the USACE instead of using the Regulatory Request System.

Discussed the need for PJDs or Approved Jurisdictional Determinations (AJDs). The Project team stated that use of PJDs has been the strategy thus far and there was no indication this needed to change. Given compensatory mitigation is not anticipated, the Project team believes the need for AJDs is strategically unnecessary. Also discussed the Project's approach to PCN submissions.

The group discussed the anticipated changes to regional conditions as part of the 2026 NWP renewal, such as modifications to culvert conditions and revegetation and bank stabilization requirements. USACE mentioned that the Project could consider multiple NWPs, such as NWP 14, given that the Project impacts will primarily be associated with temporary access roads and NWP 57 is not currently certified for water quality in Montana. North Plains agreed to notify USACE when the Draft EIS is published.

North Plains notified the USACE that the Draft EIS was published on January 9, 2026. North Plains will comply with the applicable NWP requirements.

7.2.7 North Dakota Department of Water Resources

North Plains began coordinating with the NDDWR during Project development to discuss permitting recommendations. Detailed records of meeting notes and significant correspondence are included in Appendix J-6, with a summary of key meetings and communications outlined below.

July 9, 2024 – Meeting between NDDWR and North Plains: North Plains held a call with the NDDWR to better understand the process of applying for a sovereign lands crossing permit. During the discussion, the NDDWR outlined the required permit details and explained the review process involving other agencies. The NDDWR explained that the permit remains valid for the

life of the project and does not require renewal unless there is a change in the crossing location or method.

January 21, 2025 – NDDWR response to notification letter: The NDDWR stated that the Project does not require a water appropriation permit unless surface water or groundwater is diverted for construction; in which case, a permit will be necessary under NDCC Section 61-04-02. The NDDWR also highlighted the importance of monitoring observation wells, and if any are required to be removed, the Water Appropriation Division should be contacted for proper abandonment. Any work within or changes to structures within the OHWM of navigable waterbodies, including the Heart and Cannonball Rivers, will require prior authorization from the NDDWR. The Project area lies within a FEMA-mapped National Flood Insurance Program (NFIP) regulatory floodplain, and the Project must work with the local floodplain administrator to achieve NFIP compliance. The NDDWR requires notification if the Project impacts watercourses, agricultural drains, wetlands with a contributing watershed area of 80 acres or more, or water control devices, as such impacts may require drainage or construction permits.

November 25, 2025 – Meeting between NDDWR and North Plains: North Plains held a call with the NDDWR to refresh Project coordination regarding waterbody crossings that may warrant a sovereign land crossing permit. The NDDWR suggested submitting a single application for both the Cannonball River and Heart River crossings and provided further details on information to include in the application. North Plans and NDDWR also discussed the expected timeframe for when the application would likely be submitted and the potential application processing time.

January 13, 2026 – Meeting between NDDWR and North Plains: North Plains met in person with NDDWR to review whether the Project will require a Sovereign Land permit for proposed waterbody crossings. A permit is needed when construction occurs partially or entirely within the OHWM of a navigable waterbody, as the State of North Dakota owns streambeds, islands, and other areas lying within the OHWM of navigable lakes and streams. The group reviewed the Project Route and looked at the Project crossing of the Heart River and crossings of Cannonball River together using a Project web map. Following review and discussion, NDDWR will coordinate internally to clarify which crossings near the upper reaches of the Cannonball River drainage should be included in the Project's Sovereign Land permit application. The proposed Heart River crossing will be included in the North Plains application because this segment of the river is clearly considered navigable.

The Project will comply with the NDDWR's requirements by obtaining a water appropriation permit if surface water or groundwater diversion are required. If any NDDWR observation wells are encountered during Project activities, the Water Appropriation Division will be contacted to ensure proper abandonment. For any work over or within the OHWM of state navigable waterbodies, including the Heart and Cannonball Rivers, prior authorization from the NDDWR will be obtained where required. The Project will work directly with the local floodplain administrator to ensure compliance with NFIP requirements. The Project will also obtain the necessary drainage or construction permits as required.

7.2.8 North Dakota Department of Environmental Quality

Correspondence between NDDEQ and North Plains is included in Appendix J-7, with a summary outlined below.

January 9, 2025 – NDDEQ response to notification letter: The NDDEQ stated that projects should take necessary measures to minimize fugitive dust emissions during construction and address

any complaints efficiently. Construction near water bodies must avoid disturbance, prevent siltation, and include prompt restoration, with precautions to prevent spills. Projects disturbing one or more acres require a construction stormwater permit, and additional local sediment and erosion control measures may apply. Care should be taken to avoid spills in sensitive groundwater areas, with immediate reporting and remedial action required. Solid waste must be managed according to state regulations, with efforts to reduce, reuse, and recycle encouraged to reduce waste management costs.

The Project will comply with NDDEQ recommendations by implementing dust control measures, such as water spraying or using dust suppressants during construction to minimize fugitive dust emissions. Any complaints regarding dust or other issues will be promptly addressed. For construction near waterbodies, the Project will use BMPs to minimize disturbance, protect stream beds, and ensure prompt restoration of any disturbed areas, including precautions to prevent spills from equipment or fuel handling. A SWPPP will be developed in accordance with the Stormwater Construction General Permits administered by the NDDEQ. In areas with defined sensitive groundwater, the Project will ensure proper spill containment and reporting procedures, along with immediate remedial actions if needed. Solid waste generated during construction will be managed according to state regulations, with a focus on segregating waste to encourage recycling and reduce management costs.

7.2.9 North Dakota Geological Survey

Correspondence between NDGS and North Plains is included in Appendix J-8, with a summary outlined below.

December 30, 2024 – Response to notification letter: The NDGS stated that the project routes pass through areas where landslides have been previously mapped, particularly in Golden Valley, Slope, Grant, Morton, and Oliver counties and that these are areas would best be avoided when placing surface structures such as transmission line towers.

While areas of landslide deposits mapped by the NDGS are within the Project Corridor, North Plains has sited all structures outside of the mapped landslide layer.

7.2.10 North Dakota Parks and Recreation Department

Correspondence between NDPR and North Plains is included in Appendix J-9, with a summary outlined below.

March 6, 2024 – Email correspondence between NDPR and North Plains: The NDPR provided North Plains with Natural Heritage Inventory data.

March 17, 2025 – Email correspondence between NDPR and North Plains: The NDPR provided North Plains with Natural Heritage Inventory data.

January 7, 2025, to March 25, 2025 – Email correspondence between NDPR and North Plains: On January 7, 2025, NDPR emailed North Plains in response to the Project notification letter. The email requested a GIS shapefile or KMZ for the Project to review if there are NDPR properties within the Study Area and to provide records from the NDPR databases. On March 4, 2025, North Plains provided KMZs of the route and study area as shown on the map attached to the Project notification letter.

7.2.11 Natural Resources Conservation Service

Correspondence between NRCS and North Plains is included in Appendix J-10, with a summary outlined below.

January 24, 2025 – NRCS response to notification letter: The NRCS stated that under the Farmland Protection Policy Act, farmland conversion to non-agricultural use must be documented when federal funding is involved. The Wetland Conservation Provisions of the 1985 Food Security Act require that wetland impacts be minimized, with specific guidelines for installing permanent structures in wetlands to avoid loss of U.S. Department of Agriculture (USDA) benefits. These guidelines include ensuring that wetland disturbance is temporary, no drainage occurs, and construction activities are minimized to protect the wetland environment.

April 11, 2025 – Email correspondence between NRCS and North Plains: North Plains clarified that the Project was awarded funding from the DOE through the GRIP Program under FOA 3195; however, the DOE has not yet provided funding. Should the DOE move forward with the GRIP funding, North Plains anticipates that the DOE will notify the NRCS to initiate the review. The NRCS responded to the email, thanking North Plains for the information.

Should the Project be awarded funding from the DOE, North Plains will comply with the Farmland Protection Policy Act, as required. The Project will comply with the NRCS guidelines by minimizing impacts to wetlands.

7.2.12 North Dakota Office of the Governor

On August 6, 2024, North Dakota Governor Doug Burgum expressed support for the Project (Office of the Governor, 2024).

North Dakota Governor Armstrong has engaged with United States Secretary of Energy Chris Wright on energy issues important to the state. In March 2025, Governor Armstrong advocated for federal funding through the GRIP Program to support North Plains Connector (Office of the Governor, 2025).

7.2.13 North Dakota Transmission Authority

On December 11, 2025, the NDTA issued a letter of support for the Project. The letter is included in Appendix J-11. The NDTA stated that “there is a clear and urgent need for new transmission to support large-load growth and maintain system reliability. NPC directly addresses this need by relieving congestion, expanding export capability, and strengthening North Dakota’s ability to deliver generation to regional markets. Long haul high-voltage direct current transmission will be essential to the future electric system, providing dependable transfer capability across regions with different resource mixes and enhancing resilience during extreme weather events. As North Dakota’s load grows, our connection to the greater grid is increasingly important, both to support our expanding energy needs and to ensure reliable imports should an adverse generation event occur with North Dakota generation. NDTA views the North Plains Connector as vital to North Dakota’s long-term reliability objectives and respectfully supports its approval.”

7.2.14 National Park Service

North Plains coordinated with the NPS during the early stages of route development to understand any potential concerns if the Project were located near NPS sites, particularly the South Unit of

Theodore Roosevelt National Park and Knife River Indian Villages (KRIV) National Historic Site. Correspondence between NPS and North Plains is included in Appendix J-12, with a summary outlined below.

October 15, 2021 – Meeting summary between NPS and North Plains: During the meeting, it was discussed that the NPS would require detailed information on tower heights and spacing for visual impact analysis, particularly if the Project is close to NPS parks and sites. The NPS noted that southern routes were generally preferred, with suggestions to keep routes over 5 miles from Theodore Roosevelt National Park to avoid significant viewshed impacts, although certain topographies may allow for closer routes. The meeting also addressed concerns related to KRIV National Historic Site, noting that Tribes have previously expressed sensitivity to preserving dark night skies and minimizing light pollution. Visual impacts were noted as a concern, especially if the Project is in close proximity to KRIV. However, it was mentioned that if the route avoids crossing the Missouri River, significant impacts to KRIV are unlikely.

In response to the NPS's requests, North Plains has designed the Project Corridor to be approximately 26.6 miles south of the South Unit of Theodore Roosevelt National Park and 19.3 miles southeast of the KRIV, effectively addressing concerns about visual impacts to NPS sites.

7.2.15 State Historical Society of North Dakota

North Plains began conversations in early 2022 with the SHSND to establish contacts for cultural resource surveys. North Plains contacted the North Dakota SHPO for data that established the formal Record Search in 2022 with updates completed in 2023, 2024, and a project-wide update in March 2025. Correspondence is included in Appendix J-13, with a summary of key meetings and communications outlined below.

January 17, 2024 – Meeting between SHPO and North Plains: Staff from North Dakota SHPO, North Plains, and the DOE held a formal call to discuss methodology of field work, participation of Tribes in survey and reporting, site form completion and review process, development of a Programmatic Agreement to support Section 106 consultation, and the report preparation and review process.

September 27, 2024 – Meeting between SHPO, DOE, and North Plains: Staff from North Dakota SHPO, North Plains, and the DOE held a formal call to discuss survey methodology and establishing the Area of Potential Effects for the federal NRHP review and Section 106 consultation. Also discussed was the status of cultural reports and Commission application preparation.

January 2, 2025 – Response to notification letter: The SHSND responded to the notification letter, recommending a Class III (pedestrian survey) of cultural resources in the project area. The SHSND noted that the survey and protocols they consulted on with the DOE will be sufficient for their review under North Dakota laws.

North Plains will continue to coordinate with the North Dakota SHPO according to the Programmatic Agreement discussed in Section 6.4.

7.2.16 Tribal Outreach

North Plains has engaged 21 Tribal governments and THPOs. North Plains identified Tribal governments by considering Tribal areas of cultural importance, treaty areas, and trust lands.

North Plains introduced the Project to THPOs from Tribes while seeking their participation in routing activities, surveys, and cultural reports. The Project also had TCS from 18 interested Tribes participate in fieldwork during the 2022, 2023, 2024, and 2025 survey seasons. THPO field visits and monthly survey meetings helped identify mitigation techniques for Tribally identified sites along the Project Route.

Due to the transmission line crossing areas of cultural importance and treaty lands, North Plains established a Tribal Engagement Team to properly organize and facilitate relationships and communications between groups. The Tribal Engagement Team has met regularly with THPOs to review the results of field surveys.

North Plains has avoided disturbance to Tribally identified sites, or where avoidance buffers of sites are not possible, North Plains is working with THPOs to minimize impacts through use of existing disturbed areas and monitoring during construction. Additionally, the DOE will continue Section 106 Consultation with Tribes during the NEPA review process.

Letters of support for the Project from THPOs are included in Appendix J-14.

7.2.17 Local Government Agencies

North Plains has met frequently with Golden Valley, Slope, Hettinger, Grant, Morton, and Oliver counties to coordinate Project development, understand county regulations, and address relevant concerns. North Plains has provided the draft Noxious Management Weed Plan (see Attachment F of the CRMP in Appendix G) to the counties for approvals. All counties have approved the draft Noxious Weed Management Plan except for Oliver County, which is pending. Approval of the Noxious Weed Management Plan by Oliver County is anticipated in the spring of 2026. Refer to Table 7.2.17-1 below for a list of Project approvals for each local government agency. Correspondence summarizes of the CUP and SUP hearings between the county and North Plains are described in detail thereafter.

TABLE 7.2.17-1

Local Government Agency Project Approvals

County / Township	Local Government Agency Action (Conditional/Special Use Permit Issued)	Appendix Reference
Golden Valley	Approved on November 7, 2024	Appendix E-1
Slope County	Approved on January 8, 2025	Appendix E-2
Hettinger County	Approved on January 8, 2025	Appendix E-3
Havelock Township, Hettinger County	Approved on May 5, 2025	Appendix E-4
Grant County	Approved on April 16, 2025	Appendix E-5
Oliver County	Anticipated in Quarter 1 2026	-
Morton County	Anticipated in Quarter 2 2026	-

With the exception of Morton and Oliver counties, North Plains has obtained all CUPs required to construct and operate the Project. Permits for Oliver and Morton counties are anticipated to be issued in the first and second quarter of 2026, respectively. North Plains will continue to work with the counties to finalize Road Use Agreements prior to construction. Prior to construction, North Plains anticipates meeting with each county annually to provide updates on the development of the Project.

7.2.18 Little Missouri Scenic River Commission

North Plains presented the Project at the annual LMSRC meeting on September 9, 2025. The LMSRC expressed interest in the Project and was appreciative of North Plains' stakeholder-first approach. The LMSRC did not have any questions or concerns related to the Little Missouri River crossing. The LMSRC does not hold regulatory authority over the Project, so no formal approvals or actions resulted from the meeting.

7.2.19 Old Red Old Ten Scenic Byway Committee

North Plains met with the Old Red Old Ten Scenic Byway Committee (Byway Committee) on July 29, 2025. The Byway Committee stated that the Project would not impact the Old Red Old Ten Scenic Byway. No additional concerns were raised at the meeting.

7.2.20 County Water Management Districts

North Plains met with the Oliver County and Morton County Water Management Districts on January 14, 2026, to introduce the Project. North Plains described how the Project was sited to avoid interfering with easements for the Square Butte 5 Dam. North Plains plans to meet with the water management districts in February 2026 for additional discussion.

7.2.21 Public Participation and Engagement

North Plains conducted public engagement events and open houses accessible to residents and landowners near the Project. North Plains engaged with the residents, landowners, and local government officials about the Project routing process at the open houses. North Plains presented the Project in detail, addressed concerns raised by participants, presented the need for the Project, and gathered valuable feedback on the route.

North Plains held multiple rounds of public engagement, including open houses, as shown in Table 7.2.21-1.

TABLE 7.2.21-1

Public Engagement Events

State / Date	Event	Location
MONTANA		
June 08, 2022	Fallon County Landowner Open House	Baker
June 09, 2022	Custer County Landowner Open House	Miles City
June 09, 2022	Rosebud County Landowner Open House	Forsyth
October 25, 2022	Rosebud County Landowner Open House	Colstrip
October 25, 2022	Custer County Landowner Open House	Miles City
October 26, 2022	Fallon County Landowner Open House	Baker
April 29, 2024	Rosebud County Landowner Dinner	Colstrip
April 30, 2024	Rosebud County Public Information Breakfast	Colstrip
April 30, 2024	Custer County Landowner Dinner	Miles City
May 01, 2024	Custer County Public Information Breakfast	Miles City
May 01, 2024	Fallon County Landowner Dinner	Baker
May 02, 2024	Fallon County Public Information Breakfast	Baker
September 23, 2024	Rosebud County Open House	Forsyth
September 24, 2024	Custer County Open House	Miles City
September 24, 2024	Fallon County Open House	Baker

TABLE 7.2.21-1

Public Engagement Events

State / Date	Event	Location
October 27, 2025	Miles City Landowner Grab & Go Meal/Dinner	Miles City
October 28, 2025	Miles City Public Information Breakfast	Miles City
October 28, 2025	Colstrip Landowner Dinner	Colstrip
October 29, 2025	Colstrip Public Information Breakfast	Colstrip
October 29, 2025	Baker Landowner Grab & Go Meal/Dinner	Baker
October 30, 2025	Baker Public Information Breakfast	Baker
NORTH DAKOTA		
April 25, 2022	Golden Valley/Slope County Landowner Open House	Dickinson
April 25, 2022	Hettinger/Grant County Landowner Open House	Mott
April 26, 2022	Oliver/Morton County Landowner Open House	St. Anthony
October 26, 2022	Golden Valley/Slope County Landowner Open House	Amidon
October 27, 2022	Hettinger/Grant County Landowner Open House	Mott
October 27, 2022	Oliver/Morton County Landowner Open House	Mandan
April 15, 2024	Oliver/Morton County Landowner Dinner	Mandan
April 16, 2024	Oliver/Morton County Public Information Breakfast	New Salem
April 16, 2024	Hettinger County Landowner Dinner	Regent
April 17, 2024	Hettinger County Public Information Breakfast	Mott
April 17, 2024	Golden Valley/Slope County Landowner Dinner	Amidon
April 18, 2024	Golden Valley/Slope County Public Information Breakfast	Amidon
April 18, 2024	Grant County Landowner Dinner	Carson
April 19, 2024	Grant County Public Information Breakfast	Elgin
September 25, 2024	Golden Valley/Slope/Hettinger/Stark County Open House	Dickinson
September 26, 2024	Morton/Grant County Open House	New Salem
September 26, 2024	Oliver/Grant County Open House	Mandan
October 20, 2025	Mandan Landowner Dinner	Mandan
October 21, 2025	New Salem Public Information Breakfast	New Salem
October 21, 2025	Flasher Landowner Grab & Go Meal/Dinner	Flasher
October 22, 2025	Elgin Public Information Breakfast	Elgin
October 22, 2025	Regent Landowner Grab & Go Meal/Dinner	Regent
October 23, 2025	Mott Public Information Breakfast	Mott
October 23, 2025	Amidon Landowner Grab & Go Meal/Dinner	Amidon
October 24, 2025	Amidon Public Information Breakfast	Amidon

The public engagement events and open houses played a crucial role in promoting transparency, fostering dialogue, and incorporating public input into the decision-making process. The comments and suggestions received from the public were considered in the Project planning and route development process.

7.2.22 Public Scoping Meetings

On October 25, 2024, the DOE GDO and the Montana Department of Environmental Quality, in coordination with the Montana BLM, USFS, and USDA ARS, jointly issued a NOI to prepare an EIS for the Project. Pursuant to the NEPA and the Montana Environmental Policy Act, DOE hosted five public scoping meetings to assess the environmental effects of siting, constructing, operating, and maintaining the Project, as shown on Table 7.2.22-1.

Four of the meetings were in-person, and one was virtual to accommodate more attendees. Interested parties were invited to participate in the public scoping meetings to learn more about

the Project and DOE's environmental review process, as well as submit formal comments on the Project. Personnel from DOE, Montana Department of Environmental Quality, Montana BLM, USFS, and USDA ARS were available for informal discussions. However, DOE did not accept oral comments during the scoping meetings.

TABLE 7.2.22-1

Public Scoping Meetings

Meeting Date	Meeting Format	Meeting Location
November 6, 2024	In Person	Mandan, North Dakota
November 7, 2024	In Person	Dickinson, North Dakota
November 12, 2024	In Person	Miles City, Montana
November 13, 2024	In Person	Colstrip, Montana
November 19, 2024	Virtual	Online

7.2.23 Utility Support Letters

On February 2, 2026, MDU provided a letter of support for the Project. The letter is included in Appendix J-15. MDU stated that the Project represents a timely investment that would strengthen North Dakota's electric grid and increase transfer capacity between North Dakota and its western neighbors. MDU identified benefits including improved service to North Dakota customers, support for economic and workforce development, and the potential for MDU investment in the Project.

8.0 FACTORS CONSIDERED

In accordance with the Siting Act, the Commission is guided by a set of considerations when evaluating applications and designating sites, corridors, and routes. This section outlines the considerations specified in NDCC Section 49-22-09 and an evaluation of each consideration specific to the Project.

8.1 PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

As outlined in NDCC Section 49-22-09(a), this section references available research and investigations related to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.

Research and investigations have been conducted to evaluate environmental and socioeconomic conditions related to the Project, including avoidance and minimization measures, as outlined in Section 6.1 (Socioeconomics and Demographics), Section 6.2 (Public Services), Section 6.3 (Health and Safety), Section 6.4 (Cultural Resources), Section 6.5 (Visual Resources), Section 6.6 (Public Lands, Easements, and Recreational Areas), Section 6.7 (Land Use), Section 6.8 (Geological and Soil Resources), Section 6.9 (Water Resources), Section 6.10 (Vegetation Resources), and Section 6.11 (Wildlife and Special Status Species Resources).

8.2 TECHNOLOGIES TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS

As outlined in NDCC Section 49-22-09(b), this section addresses the effects of new electric energy conversion and transmission technologies and systems designed to minimize adverse environmental impacts.

North Plains will utilize the most current transmission technologies and systems designed to minimize adverse environmental impacts.

8.3 BENEFICIAL USES OF WASTE ENERGY

As outlined in NDCC Section 49-22-09(c), this section addresses the potential for beneficial uses of waste energy from the proposed electric energy conversion facility.

This factor is not applicable to the Project. No waste energy is produced by a transmission line. Transmission lines are designed to transport electricity from one place to another. Since transmission lines don't generate energy, there is no opportunity to utilize waste energy.

8.4 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

As outlined in NDCC Section 49-22-09(d), this section addresses adverse direct and indirect environmental effects that cannot be avoided if the proposed route is designated.

Unavoidable environmental effects associated with Project development are described for each resource in Section 6. The Project is expected to permanently impact approximately 96.3 acres during operations, rendering these areas unavailable for other uses. Additional unavoidable effects include presence of the Project on the landscape and construction-related impacts, such as sound and air emissions from construction activities, temporary soil disturbance, vegetation removal, increased traffic, and potential disruptions to local wildlife habitats.

8.5 ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE

As outlined in NDCC Section 49-22-09(e), this section references alternatives to the proposed corridor or route, developed during the hearing process, that minimize adverse effects. A detailed discussion of alternative methods for serving the need is provided in Section 1.5 (Alternatives).

8.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES

As outlined in NDCC Section 49-22-09(f), this section addresses the irreversible and irretrievable commitments of natural resources should the proposed corridor or route be designated.

Irreversible and irretrievable commitments of natural resources pertain to the utilization of nonrenewable natural resources and the implications of such use for future generations. Irreversible effects arise primarily from the consumption or destruction of specific natural resources that cannot be replaced within a reasonable timeframe. Conversely, irretrievable resource commitments refer to the loss in value of an affected natural resource that cannot be restored due to the action taken.

Since the Project is an interregional high voltage electric transmission line that transfers energy rather than generating it, its operation does not require the use of natural resources in the same manner as a generation facility. Therefore, there are few irreversible and irretrievable commitments associated with this Project; those that do exist are primarily related to construction activities.

Construction of the Project will require a variety of commitments to natural resources. While not all materials are listed here, key resources include aggregate and concrete for foundations and access roads; steel for structures; copper and aluminum for conductors and electrical

components; zinc for corrosion protection; and hydrocarbon fuels for equipment operation and vehicle travel. In addition, construction will result in changes to land use.

8.7 DIRECT AND INDIRECT ECONOMIC IMPACTS

As outlined in NDCC Section 49-22-09(g), this section evaluates the direct and indirect economic impacts of the proposed facility. The Project represents an approximately $3.127 billion investment in North Dakota and will be a long-term asset. The Project will provide economic benefits through local tax revenues, landowner payments, and job creation.

Anticipated construction will require a peak temporary workforce of approximately 400 workers in North Dakota. The Project will also stimulate the creation of jobs resulting from local spending on project materials, professional services, and hospitality. Two to four full-time equivalent jobs are anticipated for the operation of the Project

In the long term, landowner payments and tax contributions from the Project's construction and operation will support the local economy. The Project's development is expected to diversify and strengthen the economic foundation of southwestern North Dakota.

Where local contractors are utilized for portions of the construction, wages paid to workers will add to the region's total personal income. Additional income will be generated through the circulation of funds paid by North Plains for business expenses, state and local taxes, and contractor services. Purchases of equipment, energy, fuel, operating supplies, and other products and services will also benefit businesses across the counties and the state.

Direct economic impacts include temporary land disturbances during construction, which may briefly interrupt farming and ranching for landowners, though permanent impacts will be minimal. Agricultural areas surrounding each structure will generally remain usable, and landowner compensation is provided through established agreements.

8.8 EXISTING PLANS FOR OTHER DEVELOPMENTS

As outlined in NDCC Section 49-22-09(h), this section evaluates existing plans by the state, local governments, and private entities for other developments at or near the proposed corridor or route. Through North Plain's stakeholder outreach to state and local governments, no developments, at least none of concern to the agencies, were identified near the proposed corridor or route.

The potential impact of private entity developments was also considered in the design of the Project Route and right-of-way. All landowners have been consulted regarding the Project Route and structure placement, and all landowner easement options were reviewed for conflicting easements that would prohibit the development of the Project.

Existing private plans known to North Plains include the Minnesota Power HVDC Modernization Project and the Morton County Switchyard. The HVDC Modernization Project includes the planned East Oliver Substation, through which the Project is proposing to connect to MISO on the eastern grid. The Morton County Switchyard is under development and will be owned and operated by Basin Electric Power Cooperative. The switchyard will be located in Morton County, North Dakota and serve as the connection point between the Morton Transmission Line and the interconnection to SPP on the eastern grid.

8.9 EFFECT ON SCENIC AREAS, HISTORIC SITES, AND CULTURAL RESOURCES

As outlined in NDCC Section 49-22-09(i), this section addresses the effects of the proposed route on existing scenic areas, historic sites, structures, and paleontological or archaeological sites.

A Class I Literature Review and Class III Archaeological Survey were conducted for the Project. The Class I Literature Review involved examining documentation available at the North Dakota SHPO, including information on archaeological and historic sites and architectural resources within one mile of the Project Corridor. This review also included an examination of previous cultural resources inventories within this radius. The Class III inventory consisted of a pedestrian survey covering the entire Project Corridor. A summary of the Class I and Class III Cultural Resources Inventory is included in Appendix I-1.

As part of the Section 106 NHPA consultation being led by the DOE, a Programmatic Agreement has been developed through joint coordination between North Plains, DOE, North Dakota SHPO, Montana SHPO, interested Native American Tribes, and the cooperating federal agencies. The Programmatic Agreement outlines roles and responsibilities for the Section 106 process on the Project, discusses what work has already been completed by North Plains, and establishes how agency reviews and consultation will be handled through the completion of the Project. Under the Programmatic Agreement, the North Dakota SHPO, along with other consulting parties, will review cultural resource reports and the potential effects of the Project.

The Class I and Class III Cultural Resources Inventory Report for the 2022-2023 field seasons will be submitted to the DOE; as part of the Section 106 process, the North Dakota SHPO will review and provide concurrence on the report. The results of the 2024-2025 field seasons will be included in an addendum report, which is underway. A copy of the concurrence letters from SHPO will be provided once received. Archaeological sites on private and state lands will be avoided during construction following the North Dakota SHPO's guidance. Archaeological sites on USFS lands will be avoided during construction following USFS guidance. Tribally identified sites will be avoided during construction following the participating THPOs' guidance.

North Plains has designed the Project to avoid impacting cultural resources. Physical disturbance of cultural resource site boundaries will be avoided during construction by maintaining a buffer around site boundaries via flagging, fencing, or other appropriate method. Where avoidance of a site boundary is not possible, North Plains will implement measures to ensure the sensitive features within the site are avoided, such as fencing and monitoring by a qualified archaeologist or Tribal Cultural Specialist during construction, installing construction mats for driving of heavy equipment, or other treatment options developed under the Programmatic Agreement between DOE, SHPOs, cooperating agencies, Tribes, and North Plains. Through these measures and in consultation with key stakeholders including the North Dakota SHPO, impacts to cultural resources will be avoided.

The Project will cross the Old Red Old Ten Scenic Byway in Morton County, North Dakota, just west of Mandan near milepost 29 on the Oliver Transmission Line. Temporary visual impacts to the scenic byways will occur during construction. During operations, indirect, but permanent, visual impacts are anticipated. North Plains has coordinated with the Old Red Old Ten Scenic Byway Committee regarding the Project. Where the Project crosses the Old Red Old Ten Scenic Byway, the Project parallels the existing Fort Thompson–Leland Olds 345-kV Transmission Line, reducing additional visual disruption to the byway.

The Project will also cross the Little Missouri River, North Dakota's only designated State Scenic River, in Slope County, North Dakota near milepost 187 on the HVDC Transmission Line. The Project will not affect the free-flowing nature of the Little Missouri River. No impoundment, diversion, straightening, or other modifications to the river are planned as part of the Project. The Project design and construction activities will ensure that the river remains in its natural condition, consistent with the requirements of the Little Missouri River State Scenic River Act (NDCC Chapter 61-29). Additionally, North Plains will minimize impacts by implementing the BMPs outlined in the CMRP in Appendix G.

8.10 EFFECT ON BIOLOGICAL RESOURCES

As outlined in NDCC Section 49-22-09(j), this section references the effects of the proposed route on areas unique for their biological wealth or because they are habitats for rare and endangered species. A full discussion of biological resources, including avoidance and minimization measures, is provided in Section 6.10 (Vegetation Resources) and Section 6.11 (Wildlife and Special Status Species Resources). The CMRP, included as Appendix G, outlines specific strategies to mitigate biological impacts during construction and reclamation.

8.11 AGENCY COMMENTS

As outlined in NDCC Section 49-22-09(k), this section addresses problems raised by federal agencies, other state agencies, and local entities regarding the proposed route.

Details regarding discussion between North Plains and federal agencies, other state agencies, and local entities regarding the proposed route is provided in Section 7.0 (Stakeholder Engagement). Section 7.1 addresses Project notification letters to federal, state, and local agencies and stakeholders identified in NDAC Section 69-06-01-05. Section 7.2 provides a summary of agency and stakeholder correspondence, including conclusions for each agency when relevant, outlining how the Project conformed to specific requests, approvals, or feedback received during the outreach process. Appendix J contains copies of high-level agency and stakeholder correspondence, meeting notes, and other communications received to date.

9.0 QUALIFICATIONS OF CONTRIBUTORS

The qualifications of each significant contributor involved in the facility site location study and this application are provided below in Table 9.0-1.

TABLE 9.0-1

Qualifications of Contributors

Name and Project Role	Education and Professional Experience
Brant Johnson Senior Vice President, Development Grid United LLC	Brant Johnson holds a Juris Doctor and a Bachelor of Science in Zoology from Brigham Young University and is a licensed attorney in Texas and Montana. He provided strategic leadership for the Project. With more than 20 years of experience as an energy professional, Brant has supported the development of major linear infrastructure projects across the US. Brant has deep experience managing regulatory, environmental, Tribal and landowner issues, and he employs an inclusive approach with project stakeholders to solicit meaningful feedback during project development.
Denisha Cummings Senior Consultant, Development Grid United LLC	Denisha Cummings holds a Bachelor of Science Degree from East Central University and has additional education from Oklahoma State University. Her responsibilities included managing communication with landowners, negotiating easements and access agreements, and addressing property-related questions or concerns throughout project development.

TABLE 9.0-1

Qualifications of Contributors

Name and Project Role	Education and Professional Experience
John Kuba Vice President, Environment Grid United LLC	John Kuba a Bachelor of Science in Animal Science with a minor in Biology from Tarleton State University. John brings nearly 20 years of experience supporting energy development through conscientious consideration of the natural, cultural and human environments. John Kuba oversees local, state and federal permitting, and environmental compliance. John maintains responsibility for Grid United's strategic environmental initiatives including comprehensive life cycle environmental compliance, rigorous resource study and creative approaches to apply the mitigation hierarchy.
Donnie Joe (DJ) Worth Director, Project Development Grid United LLC	Donnie Joe (DJ) Worth holds a Bachelor of Science in Chemical Engineering with a minor in Petroleum Engineering from Oklahoma State University and a Master of Philosophy in Energy Technologies from the University of Cambridge. He has more than six years of project development experience in the electric power industry. His experience includes project planning, managing budgets and schedules, and permitting.
Kat Bridwell Director, Engineering Grid United LLC	Kat Bridwell holds a bachelor's degree in civil engineering from Montana State University and is a registered Professional Engineer in multiple western U.S. states, as well as in British Columbia, Alberta, and Ontario. She is a Director of Engineering at Grid United, where she supports development, engineering, design, and permitting efforts for North Plains Connector. She works closely with teams across development, commercial, procurement, execution, and other functional areas to ensure seamless coordination and successful project delivery, leveraging her deep technical expertise in large-scale grid infrastructure.
Mike Podbeseck Director, HVDC Engineering Grid United LLC	As a HVDC Director, Mike Podbesek oversees HVDC design and engineering for Grid United projects, focusing on converter stations and system interfaces. He also supports core functions such as development, commercial activities, and procurement. Mike brings nearly twenty years of power industry experience, including more than a decade in HVDC roles as a senior advisor, subject matter expert, and project lead in both consulting and supplier positions. Mike holds a bachelor's degree in electrical engineering from NC State University, is a licensed Professional Engineer, and actively participates in CIGRE and the Institute of Electrical and Electronics Engineers (IEEE).
Mollie Smith Attorney Fredrikson & Byron, P.A.	Ms. Smith assists clients with transmission line, pipeline, wind farm, and solar permitting matters in North Dakota, South Dakota, and Colorado. At the state level, Mollie represents clients in certificate of corridor compatibility/route permit, certificate of site compatibility, and rulemaking proceedings before the North Dakota Public Service Commission; and energy facility permit proceedings before the South Dakota Public Utilities Commission. At the local level, Mollie advises and assists clients with a variety of permitting-related matters, including obtaining conditional use/special use permits, variances and subdivision approvals, and participating in zoning ordinance amendment processes. Mollie has a Bachelor of Arts in English from Northern State University, a Master of Arts in Literature from Colorado State University, and a Juris Doctor from the University of Minnesota Law School.
Lindsey Churchill, PhD Senior Project Manager Merjent, Inc.	Lindsey Churchill has 18 years of environmental permitting experience in wetland and natural resources. Her responsibilities included project management, application preparation, and oversight agency outreach and coordination. She has a PhD in Natural Resources Management from North Dakota State University, a Master of Science in Natural Resources Management from North Dakota State University, and Bachelor of Science in biology and mathematics from University of Jamestown.
Dirk Churchill Environmental Specialist Merjent, Inc	Dirk Churchill holds a Bachelor of Science in Natural Resources Management from North Dakota State University. He is an environmental analyst and biologist with more than 15 years of experience specializing in environmental assessments and permitting. His responsibilities primarily included preparing the Application, which included gathering supporting documentation, coordinating with project team members, and reviewing related documents.
Kyle Solberg GIS Specialist Merjent, Inc.	Kyle Solberg has 18 years of environmental permitting experience in GIS. His responsibilities include supporting, enhancing, and streamlining mapping services to help create a wide range of data products and analysis for energy-related projects, including oil and gas pipelines, refined products, liquefied natural gas storage, wind energy, transmission line, and ethanol projects. He has a bachelor's degree in resource management from The University of Wisconsin – Eau Claire.
Damien Reinhart Cultural Resources PI Merjent, Inc.	Damien Reinhart has a Master of Arts in Anthropology from the University of Minnesota with 19 years of conducting small- and large-scale cultural resource studies in the upper Plains and Midwest. Mr. Reinhart is located in Bismarck, North Dakota and came to Merjent from federal service with the Bureau of Reclamation and the Natural Resources Conservation Service in Bismarck. In that capacity, he routinely consulted with Native American Tribes throughout the upper Plains, including all Tribes in North Dakota. He has been involved in managing the cultural resources efforts for the North Plains Connector Transmission Line Project. Mr. Reinhart meets the Secretary of the Interior's Professional Qualification Standards for Archaeology as published in 36 CFR Section 61.

TABLE 9.0-1

Qualifications of Contributors

Name and Project Role	Education and Professional Experience
Maggie Voth Senior Biologist and Project Manger WEST	Maggie Voth has 18 years of GIS experience and 15 years of environmental permitting experience on transmission and pipeline projects throughout the U.S. Her experience primarily focused on agency coordination, survey and data management; environmental permitting and impact analysis, and the development and implementation of conservation plans. She received a bachelor's degree in biology from Luther College in Decorah, Iowa, and dual master's Degrees in GIS and Natural Resources Science and Management from the University of Minnesota – Twin Cities.
Wade Hammer Senior Biologist and Senior Manager WEST	Wade Hammer has more than 21 years of environmental consulting experience. Most of his career has been focused on large linear facility (oil and gas pipeline and electrical transmission line) projects across the US. He is a water resources subject matter expert, permitting lead, and NEPA water resources author on over a dozen multi-state projects with a collective mileage well into the thousands of miles across. Wade holds a master's degree in Conservation Biology from the University of Minnesota and a bachelor's degree in biology from St. Olaf College.

10.0 REFERENCES

Amelon, S. and D. Burhans. 2006. Conservation Assessment: Myotis septentrionalis (Northern Long-eared Bat) in the Eastern United States. Pp. 69-82. In: F. R. Thompson, III, ed. Conservation Assessments for Five Forest Bat Species in the Eastern United States. General Technical Report NC-260. U.S. Department of Agriculture, Forest Service, North Central (NC) Research Station, St. Paul, Minnesota.

ANSI. 1993. Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-term Measurements with an Observer Present. Appendix D, Table 2.

Avian Powerline Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute and APLIC. Washington, D.C. Available online at: https://www.aplic.org/uploads/files/2643/SuggestedPractices2006(LR-2).pdf. Accessed October 2025.

APLIC. 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C. Available online at: https://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf. Accessed October 2025.

Bengtsson, J., J. M. Bullock, B. Egoh, C. Everson, T. Everson, T. O'Connor, P. J. O'Farrell, H. G. Smith, and R. Lindborg. 2019. Grasslands—More Important for ecosystem Services Than You Might Think. Ecosphere 10(2): e02582.

Bergeson, S. M., T. C. Carter, and M. D. Whitby. 2013. Partitioning of Foraging Resources between Sympatric Indiana and Little Brown Bats. Journal of Mammalogy 94: 1311-1320.

Brightwell, K., M. Rabbe, A. T. Pearse, B. Bainbridge, K. Tyrell, and C. Derby. 2025. Mortality of Fledged Whooping Cranes in the Aransas-Wodd Buffalo Population. Proceedings of the North American Crane Workshop 16: 104-116.

Broders, H. G. and G. J. Forbes. 2004. Interspecific and Intersexual Variation in Roost-site Selection of Northern Long-eared and Little Brown Bats in the Greater Fundy National Park Ecosystem. Journal of Wildlife Management 68(3): 602-610.

Bumble Bee Watch. 2025. Bumble Bee Watch. Developed by Xerces and Partners. Available online at: https://www.bumblebeewatch.org/. Accessed September 2025.

Butler, M. J., C. R. Sanspree, A.A. Griffin, and J. A. Moon. 2023. Whooping Crane Survey Results: Winter 2022-2023. Technical Memo, May 2023. Available online at: https://www.fws.gov/media/whooping-crane-update-winter-2022-2023. Accessed March 2025.

Caceres, M. C. and R. Barclay. 2000. Myotis septentrionalis. Mammalian Species 634: 1-4.

Cheng, T. L., J. D. Reichard, J. T. H. Coleman, T. J. Weller, W. E. Thogmartin, B. E. Reichert, A. B. Bennett, H. G. Broders, J. Campbell, K. Etchison, D. J. Feller, R. Geboy, T. Hemberger, C. Herzog, A. C. Hicks, S. Houghton, J. Humber, J. A. Kath, R. A. King, S. C. Loeb, A.

Massé, K. M. Morris, H. Niederriter, G. Nordquist, R. W. Perry, R. J. Reynolds, D. B. Sasse, M. R. Scafini, R. C. Stark, C. W. Stihler, S. C. Thomas, G. G. Turner, S. Webb, B. J. Westrich, and W. F. Frick. 2021. The Scope and Severity of White-nose Syndrome on Hibernating Bats in North America. Conservation Biology: doi: 10.1111/cobi.13739.

Commission. 2021. North Dakota Abandoned Mine Lands (AML). Available online at: https://gishubdata-ndgov.hub.arcgis.com/maps/0c4eb5ce19a84a069c1d04b449c39d43/explore?location=47.341022%2C-101.248788%2C8. Accessed March 2025.

Dana, R. P. 1991. Conservation Management of the Prairie Skippers Hesperia dacotae and Hesperia ottoe: Basic Biology and Threat of Mortality During Prescribed Burning in Spring. Station Bulletin 594-1991. Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, Minnesota.

eBird. 2025. eBird: An Online Database of Bird Distribution and Abundance [Web Application]. eBird, Cornell Lab of Ornithology, Ithaca, New York.. Available online at: https://ebird.org/. Accessed May 2025.

Ellis, K. S., A.T. Pearse, D. A. Brandt, M. T. Bidwell, W. Harrell, M. J. Butler, and M. P. van der Burg. 2022. Balancing Future Renewable Energy Infrastructure Siting and Associated Habitat Loss for Migrating Whooping Cranes. Frontiers in Ecology and Evolution 10. doi: 10.3389/fevo.2022. 931260.

Enchanted Highway. 2025. Interstate 94 – Exist 72, Enjoy the 32-Mile Scenic Drive. Available online at: https://enchantedhighwaynd.com/. Accessed March 2025.

Federal Aviation Administration (FAA). 2025. Runways, Airports, Pending Runways, Pending Airports. Available online at: https://adds-faa.opendata.arcgis.com/search?tags=airports. Accessed March 2025.

Federal Communications Commission (FCC). 2025. Cellular Towers. Available online at: https://hifld-geoplatform.hub.arcgis.com/datasets/25ee0275484a4281ae00fb41cd05ab1e_0/explore. Accessed March 2025.

Federal Emergency Management Agency (FEMA). 2025. FEMA Flood Map Service Center. U.S. Department of the Interior. Available online at: https://msc.fema.gov/portal/home. Accessed March 2025.

Fenton, M. and G. Bell. 1979. Echolocation and Feeding Behaviour in Four Species of *Myotis* (Chiroptera). Canadian Journal of Zoology 57: 1271-1277.

Fenton, M. B. and R. M. R. Barclay. 1980. Myotis lucifugus. Mammalian Species 142: 1-8. doi: 10.2307/3503792.

Ford, W. M., S. F. Owen, J. W. Edwards, and J. L. Rodrigue. 2006. Robinia pseudoacacia (Black Locust) as Day-roosts of Male Myotis septentrionalis (Northern Bats) on the Fernow Experimental Forest, West Virginia. Northeastern Naturalist 13(1): 15-24.

Grant County. 2025. Grant County Zoning Ordinance. Available online at: https://webgen1files1.revize.com/grantcountynd/Documents/Grant%20County%20Zoning%20Ordinances_1.pdf. Accessed May 2025.

Gillam, E., J.J. Nelson, Paul Barnhart. 2021. North Dakota State Bat Management Plan https://gf.nd.gov/sites/default/files/publications/nd-state-bat-management-plan.pdf. Accessed October 2025.

Henderson, L. E., L. J. Farrow, and H. G. Broders. 2009. Summer Distribution and Status of the Bats of Prince Edward Island, Canada. Northeastern Naturalist 16(1): 131-140. doi: 10.1656/045.016.0111.

Hettinger County. 2025. Hettinger County Land Use Regulations. Available online at: https://deq.nd.gov/WQ/2_NDPDES_Permits/1_AFO_CAFO/CountyZoning/Hettinger/Hettinger20070726.pdf. Accessed March 2025.

International Commission on Non-Ionizing Radiation Protection (ICNIRP). 2010. Guidelines for Limiting Exposure to Time-varying Electric and Magnetic Fields (1Hz to 100kHz). Health Physics Society. doi:10.1097/HP.0b013e3181f06c86.

ICNIRP. 2025. Power Lines - Low Frequency. Available online at: https://www.icnirp.org/en/applications/power-lines/index.html. Accessed October 2025.

iNaturalist. 2025. Observations. Available online at: https://www.inaturalist.org/. Accessed April 2025.

International Agency for Research on Cancer (IARC). 2002. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 80: Static and Extremely Low-Frequency (ELF) Electric and Magnetic Fields. Lyon, France: IARC Press.

International Committee on Electromagnetic Safety (ICES). 2019. IEEE Standards for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. IEEE Std C95.1-2019.

King, T.F. 2012. Cultural Resource Laws and Practice: An Introductory Guide: 4th Edition. AltaMira Press, Walnut Creek, California.

Lacki, M. J. and J. H. Schwierjohann. 2001. Day-roost Characteristics of Northern Bats in Mixed Mesophytic Forest. The Journal of Wildlife Management 65(3): 482-488.

Lemaire, G., J. Hodgson, and A. Chabbi, eds. 2011. Grassland Productivity and Ecosystem Services. CABI Digital Library, Wallingford, Oxfordshire, United Kingdom.

Liczner, A.R. and S.R. Colla. 2020. One-size does not fit all: at-risk bumble bee habitat management requires species-specific local and landscape considerations. Insect Conservation and Diversity. doi:10.1111/icad.12419

MacDonald, G. J., M. J. Anteau, K. S. Ellis, L. D. Igl, N. D. Niemuth, and J. L. Vest. 2024. Seasonal and Breeding Phenologies of 38 Grassland Bird Species in the Midcontinent of North America. Open-File Report 2024-1002. Ecosystems Mission Area—Species Management Research Program. Prepared in cooperation with the U.S. Department of Agriculture Farm

Service Agency, the U.S. Fish and Wildlife Service, and the Prairie Pothole Joint Venture. 43 pp. doi: 10.3133/ofr20241002.

Minnesota Power. 2024. Facilities Construction Agreement entered into by MISO and Minnesota Power, a division of ALLETE, Inc. for Square Butte TSR 91365462. February 2024. Public Version filed on the Federal Energy Regulatory Commission (FERC) Docket No. ER24-1440.

MISO. 2024a. MISO 2024 Load Forecast and Process Enhancements Workshop (December 18, 2024). Available online at: https://cdn.misoenergy.org/20241218%20Medium%20and%20Long%20Term%20Forecast%20Workshop%20Presentation667265.pdf. Accessed online November 2025.

MISO. 2024b. 2024 Long-Term Load Forecast Report. Available online at: https://cdn.misoenergy.org/MISO%20Long-Term%20Load%20Forecast%20Whitepaper_December%202024667166.pdf. Accessed online November 2025.

Monarch Joint Venture. 2025. Monarch Migration. Available online at: https://monarchjointventure.org/monarch-biology/monarch-migration. Accessed March 2025.

Montana Field Guide. 2024. Montana Field Guide. Available online at: https://fieldguide.mt.gov/displayClasses.aspx?phylum=Arthropoda. Accessed November 2025.

Multi-Resolution Land Characteristics Consortium. 2024a. National Land Cover Database Class Legend and Description. Available online at: https://www.mrlc.gov/data/legends/national-land-cover-database-class-legend-and-description. Accessed November 2025.

Multi-Resolution Land Characteristics Consortium. 2024b. National Land Cover Database Class Legend and Description. Available online at: https://www.mrlc.gov/data/legends/national-land-cover-database-class-legend-and-description. Accessed November 2025.

Nagorsen, D. W. and R. M. Brigham. 1993. Northern Long-eared Myotis (Myotis septentrionalis). Bats of British Columbia. Royal British Columbia Museum Handbook. University of British Columbia Press, Vancouver, British Columbia.

National Institute of Environmental Health Sciences (NIEHS). 1998. Assessment of Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. Research Triangle Park, NC: NIEHS.

Niemuth, N. D., A. J. Ryba, A. T. Pearse, S. M. Kvas, D. A. Brandt, B. Wangler, J. E. Austin, and M. J. Carlisle. 2018. Opportunistically Collected Data Reveal Habitat Selection by Migrating Whooping Cranes in the U.S. Northern Plains. Condor 120(2): 343-356. doi: 10.1650/CONDOR-17-80.1.

North Dakota Department of Environmental Quality (NDDEQ). 2025a. Environmental Incident Reports. Available online at: https://deq.nd.gov/wq/4_spill_Investigations/Reports.aspx. Accessed October 2025.

NDDEQ. 2025b. Department of Water Quality. Groundwater. Source Water Protection. Available online at: https://deq.nd.gov/WQ/1_Groundwater/1_SW.aspx. Accessed March 2025.

North Dakota Department of Mineral Resources (NDDMR). 2010. Locations of Sand and Gravel Sites in North Dakota map. Available online at: https://www.dmr.nd.gov/ndgs/documents/Publication_List/pdf/geoinv/GI_130.pdf. Accessed March 2025.

NDDMR. 2025 OGD Wells. North Dakota Oil and Gas Division. Available online on the North Dakota GIS Data Download Page at: https://gis.dmr.nd.gov/gisdownload.asp. Accessed March 2025.

North Dakota Department of Water Resources (NDDWR). 2025. General Water Resource MapService. Available online at: https://mapservice.dwr.nd.gov/. Accessed August 2025.

North Dakota Game and Fish Department (NDGFD). 2018. North Dakota Monarch Butterfly and Native Pollinator Strategy. Second Version. NDGFD, Bismark, North Dakota. April 2018. Available online at: https://gf.nd.gov/gnf/conservation/docs/nd-monarch-butterfly-native-pollinator-strategy.pdf. Accessed November 2025.

NDGFD. 2019a. Species Identification (Common, Game and SCP Species). Available online at: https://gf.nd.gov/wildlife/id. Accessed March 2025.

NDGFD. 2019b. Species of Conservation Priority. Available online at: https://gf.nd.gov/wildlife/scp. Accessed March 2025.

NDGFD. 2019c. Habitats. North Dakota Game and Fish Department. Available online at: https://gf.nd.gov/wildlife/habitats/habitats. Accessed March 2025.

NDGFD.2019d. Wildlife Management Areas - Listing. NDGFD, Bismarck, North Dakota. Updated August 2023. Available online at: https://gf.nd.gov/wma-listing. Accessed March 2025.

NDGFD. 2019e. Breeding Waterfowl Habitat. NDGFD, Bismarck, North Dakota. Available online at: https://gf.nd.gov/private-lands/landowner-resources/habitat-development/waterfowl. Accessed March 2025.

NDGFD. 2021. 2021 North Dakota Fishing Waters. North Dakota Game and Fish Department. Available online at: https://gf.nd.gov/magazine/2021/mar-apr/fishing-waters#se. Accessed March 2025.

NDGFD. 2025a. Little Brown Bat. NDGFD, Bismarck, North Dakota. Available online at: https://gf.nd.gov/ wildlife/id/bats/little-brown-bat. Accessed September 2025.

NDGFD. 2025b. Sharp-tailed Grouse Habitat. Available online at: https://gf.nd.gov/private-lands/landowner-resources/habitat-development/sharp-tailed-grouse. Accessed March 2025.

NDGFD. 2025c. North Dakota State Wildlife Action Plan 2025. Bismarck, North Dakota. Available online at: https://gf.nd.gov/gnf/conservation/docs/2025-swap/nd-swap-2025-with-disclaimer.pdf. Accessed October 2025.

NDGFD. 2025d. North Dakota Grassland Birds. NDGFD, Bismarck, North Dakota. Available online: https://gf.nd.gov/wildlife/id/grassland-birds. Accessed November 2025.

NDGFD. 2025e. Piping Plover. NDGFD, Bismarck, North Dakota. Available online: https://gf.nd.gov/wildlife/id/shorebirds/piping-plover. Accessed September 2025.

NDGFD. 2025f. Sharp-tailed Grouse. NDGFD, Bismarck, North Dakota. Available online: https://gf.nd.gov/wildlife/id/grassland-birds/sharp-tail-grouse. Accessed November 2025.

North Dakota Geological Survey (NDGS). 2009. 1:24,000 & 1:100,000 Scale Maps. Available online at North Dakota Geological Survey (nd.gov). Accessed March 2025.

NDGS. 2023. Areas of Landslides in North Dakota Map. Available online at: https://www.dmr.nd.gov/ndgs/landslides/ND_Landslides.pdf. Accessed March 2025.

North Dakota Department of Transportation (NDDOT). 2025. Traffic Data Management System Traffic Viewer. Available online at: https://nddot.public.ms2soft.com/tdms.ui_core/trafficviewer. Accessed June 2025.

North Dakota Department of Water Resources (NDDWR). 2015. Report on the Navigability of North Dakota's Rivers and Lakes. Available at: https://www.swc.nd.gov/pdfs/navigability_report.pdf. Accessed March 2025.

North Dakota Department of Water Resources (NDDWR). 2025. General Water Resource MapService. Available online at: https://mapservice.dwr.nd.gov/. Accessed August 2025.

North Dakota Parks and Recreation Department (NDPR). 2024. North Dakota Natural Heritage Inventory Biotics Data. NDPR, Bismarck, North Dakota. Provided March 6, 2024, by C. Dirk (NDPR).

NDPR. 2025. North Dakota Natural Heritage Inventory Biotics Data. NDPR, Bismarck, North Dakota. Provided March 17, 2025, by C. Dirk (NDPR).

North Dakota State Soil Conservation Committee. 2023. 2023 Surface Mining Report. Available online at: https://www.ndsu.edu/fileadmin/ndssc/Surface_Mining/2023_Surface_Mining_Report.pdf. Accessed March 2025.

National Park Service (NPS). 2020. Protecting Native Mixed-Grass Prairie at Little Bighorn Battlefield National Monument. Available online at: https://www.nps.gov/articles/000/protecting-native-mixed-grass-prairie-at-little-bighorn-battlefield-national-monument.htm. Accessed March 2025.

Office of the Governor. 2024. Burgum welcomes $700M to boost regional power grid capacity, reliability with North Plains Connector. Available online at: https://www.governor.nd.gov/news/burgum-welcomes-700m-boost-regional-power-grid-capacity-reliability-north-plains-connector. Accessed September 2025.

Office of the Governor. 2025. Armstrong to Energy Secretary Wright: North Dakota can play an outsized role in U.S. energy dominance. Available online at: https://www.governor.nd.gov/news/armstrong-energy-secretary-wright-north-dakota-can-play-outsized-role-us-energy-dominance. Accessed September 2025.

Old Red Old Ten Scenic Byway. 2025. Communities. Available online at: https://oldredoldten.com/?page_id=68. Accessed March 2025.

Otto, C. R. V., A. Smart, R. S. Cornman, M. Simanonok, and D. D. Iwanowicz. 2020. Forage and Habitat for Pollinators in the Northern Great Plains—Implications for U.S. Department of Agriculture Conservation Programs. Open-File Report 2020-1037. Prepared by U.S. Geological Survey, Reston, Virginia, in cooperation with the U.S. Department of Agriculture. July 7, 2020. Available online at: https://pubs.usgs.gov/of/2020/1037/ofr20201037.pdf.

Pearse, A. T., M. Rabbe, M. T. Bidwell, L. M. Juliusson, L. Craig-Moore, D. A. Brandt, and W. Harrell. 2018. Map of Whooping Crane Migration Corridor. U.S. Geological Survey (USGS) ScienceBase-Catalog, USGS Data Release Products. Available online at: https://data.usgs.gov/datacatalog/data/USGS:5a314a72e4b08e6a89d707e0. Accessed July 2024.

Pearse, A. T., D. A. Brandt, D. M. Baasch, M. T. Bidwell, J. A. Conkin, M. J. Harner, W. Harrell, and K. L. Metzger. 2020. Location Data for Whooping Cranes of the Aransas-Wood Buffalo Population, 2009-2018. US Geological Survey (USGS) data release. USGS, Reston, Virginia. May 15, 2020. doi: 10.5066/P9Y8KZJ9. Available online: https://www.sciencebase.gov/catalog/item/5ea3071582cefae35a19349a. Accessed May 2025.

Pei, C. K., Hovick, T.J., Limb, R.F., Harmon, J.P. and B.A. Geaumont. 2022. Bumble Bee (Bombus) Species Distribution, Phenology, and Diet in North Dakota. Prairie Naturalist, Special issue 1: 11-29.

Prairie Pothole Joint Venture (PPJV). 2019. Grassland Assessment of North American Great Plains Migratory Bird Joint Ventures. Potentially Undisturbed Lands GIS data. PPJV, Great Falls, Montana.

Robinson, A. C. 2014. Management Plan and Conservation Strategies for Greater Sage-grouse in North Dakota. North Dakota Game and Fish Department. Available online at: https://gf.nd.gov/sites/default/files/publications/nd-sage-grouse-plan-2014_0.pdf. Accessed March 2025.

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). 2015. Opinion on Potential Health Effects of Exposure to Electromagnetic Fields (EMF). Brussels, Belgium: European Commission.

Scientific Committee on Health, Environmental and Emerging Risks (SCHEER). 2023. Potential health effects of exposure to electromagnetic fields (EMF): Update with regard to frequencies between 1Hz and 100 kHz, 2023.

Selby, G. 2007. Regal Fritillary (Speyeria idalia Drury): A Technical Conservation Assessment. U.S. Department of Agriculture, Rocky Mountain Region. Available online at:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5206808.pdf. Accessed July 2024.

Sims, P. L. and P. G. Risser. 2000. Grasslands. In: W. D. Billings and M. G. Barbour, eds. North American Terrestrial Vegetation. Cambridge University Press, Cambridge, England.

Slope County. 2011. Slope County – Zoning Resolutions. Available online at: https://slopecountynd.gov/residents/zoning.php. Accessed March 2025.

Southwest Power Pool (SPP). 2024. 2024 SPP Resource Adequacy Report. Available online at: https://www.spp.org/documents/71804/2024%20spp%20june%20resource%20adequacy%20report.pdf. Accessed online November 2025.

State Historical Society of North Dakota (SHSND). 2020. North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects

Thomas, D. W., M. B. Fenton, and R. M. R. Barclay. 1979. Social Behavior of the Little Brown Bat, Myotis lucifugus: I. Mating Behavior. Behavioral Ecology and Sociobiology 6(2): 129-136.

Urbanek, R. P. and J. C. Lewis. 2020. Whooping Crane (Grus americana), Version 1.0. In: A. F. Poole, ed. Birds of the World. Cornell Lab of Ornithology, Ithaca, New York, USA. doi: 10.2173/bow.whocra.01. Available online at: https://birdsoftheworld.org/bow/species/whocra/cur. Accessed March 2025.

U.S. Army Corps of Engineers (USACE). 2005. Regulatory Guidance Letter No. 05-50, Subject: Ordinary High Water Mark Identification. December 7, 2005. Available online at: https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf. Accessed March 2025.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineers Research and Development Center.

U.S. Census Bureau. 2023b. Selected Economic Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2022. Available online at: https://data.census.gov/table/ACSDP5Y2022.DP03?q=dp03. Accessed March 2025.

U.S. Census Bureau. 2023c. Poverty Status in the Past 12 Months by Household Type by Age of Householder. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B17017, 2022. Available online at: https://data.census.gov/table/ACSDT5Y2022.B17017?q=b17017. Accessed March 2025.

U.S. Census Bureau. 2023. QuickFacts. Available online at: https://www.census.gov/quickfacts/. Accessed March 2025.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2022. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture, Agriculture Handbook 296.

U.S. Department of Energy (DOE). 2024. DOE Announces Public Scoping Meetings for the North Plains Connector Project. Available online at: https://www.energy.gov/gdo/articles/doe-announces-public-scoping-meetings-north-plains-connector-project. Accessed October 2025.

U.S. Department of War (DOW). 2025. REPI Program Interactive Map. Available online at: https://www.repi.mil/Resources/REPI-Interactive-Map/. Accessed March 2025.

U.S. Energy Information Administration (EIA). 2025. Annual Energy Outlook 2025. Available online at: https://www.eia.gov/outlooks/aeo/. Accessed December 2025.

U.S. Environmental Protection Agency (EPA). 2023a. Level III and IV Ecoregions of the Continental United States. Ecosystems Research, EPA, Washington, D.C. April 13, 2013. Available online at: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states. Accessed March 2025.

EPA. 2023b. Section 404 of the Clean Water Act, How Wetlands are Defined and Identified under CWA Section 404. Available online at: https://www.epa.gov/cwa-404/how-wetlands-are-defined-and-identified-under-cwa-section-404. Accessed March 2025.

EPA. 2025a. Sole Source Aquifers for Drinking Water. Office of Ground Water and Drinking Water, EPA, Washington, D.C. Available online at: https://www.epa.gov/dwssa. Accessed March 2025.

EPA. 2025b. Facility Registry Service, including layers for ACRES, SEMS, TRI, RCRA, TSCA sites. EPA, Washington, D.C. Available online at: https://geodata.epa.gov/arcgis/rest/services/OEI/FRS_INTERESTS/MapServer/. Accessed March 2025.

EPA. 2025c. Underground Storage Tanks. UST Finder. Available online at: https://www.epa.gov/ust/ust-finder. Accessed March 2025.

U.S. Fish and Wildlife Service (USFWS). 2007a. Whooping Cranes and Wind Farms - Guidance for Assessment of Impacts. Draft July 1, 2007.

USFWS. 2007b. National Bald Eagle Management Guidelines. May 2007. Available online at: https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf. Accessed March 2025.

USFWS. 2009. Whooping Cranes and Wind Development - An Issue Paper. By Regions 2 and 6, USFWS. April 2009. Available online at: https://tethys.pnnl.gov/sites/default/files/publications/USFWS_2009.pdf. Accessed March 2025.

USFWS. 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance. USFWS Regions 2, 3, 4, 5, & 6. January 6, 2014. Available online at: https://efiling.web.commerce.state.mn.us/edockets/searchDocuments.do?method=showPoup&documentId={3AC05753-A500-4D07-B26F-7F0CA662CA8E}&documentTitle=20177-133472-02. Accessed March 2025.

USFWS. 2015. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat with 4(D) Rule; Final Rule and Interim Rule. Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17. 80 Federal Register (FR) 63: 17974-18033. April 2, 2015. Accessed November 2025.

USFWS. 2016. Recovery Plan for the Northern Great Plains Piping Plover (Charadrius melodus) in Two Volumes. Volume I: Draft Breeding Recovery Plan for the Northern Great Plains Piping Plover (Charadrius melodus), 132 pp.; and Volume II: Draft Revised Recovery Plan for the Wintering Range of the Northern Great Plains Piping Plover (Charadrius melodus) and Comprehensive Conservation Strategy for the Piping Plover (Charadrius melodus) in Its Coastal Migration and Wintering Range in the Continental United States. Denver, Colorado. 166 pp.

USFWS. 2018. Dakota Skipper (Hesperia dacotae) Report on the Species Status Assessment Version 2 - September 2018. Available online at: https://ecos.fws.gov/ServCat/DownloadFile/155865. Accessed July 2024.

USFWS. 2019. Modeling Spatial Variation in Density of Golden Eagle Nest Sites in the Western United States: Spatial Data and Maps. U.S. Fish and Wildlife Service, Western Golden Eagle Team. Lakewood, Colorado. Available online: https://ecos.fws.gov/ServCat/Reference/Profile/111283. Accessed September 2025.

USFWS. 2020a. Species Status Assessment Report for the Rufa Red Knot (Calidris Canutus rufa). Version 1.1. Ecological Services New Jersey Field Office, Galloway, New Jersey. September 2020. Available online at: https://ecos.fws.gov/ServCat/DownloadFile/187781. Accessed March 2025.

USFWS. 2020b. Monarch (Danaus plexippus) Species Status Assessment Report. Version 2.1. USFWS, Washington, D.C. September 2020. 96 pp + appendices. Available online at: https://www.fws.gov/sites/default/files/documents/Monarch-Butterfly-SSA-Report-September-2020.pdf. Accessed March 2025.

USFWS. 2020c. Regal Fritillary (Speyeria idalia) Landowner Guide. USFWS, Baileys Crossroads, Virginia. May 1, 2020. Available online at: https://www.fws.gov/media/regal-fritillary-landowner-guide. Accessed July 2024.

USFWS. 2020d. Species status assessment report for the rufa red knot (Calidris canutus rufa). Version 1.1. Ecological Services New Jersey Field Office, Galloway, New Jersey.

USFWS. 2021. American Bumble Bee (Bombus pensylvanicus) Field Guide. Available online: https://www.fws.gov/media/american-bumble-bee-field-guide. Accessed May 2025.

USFWS. 2022a. Species Status Assessment Report for the Northern Long-Eared Bat (Myotis septentrionalis). Version 1.2. USFWS, Great Lakes Region, Bloomington, Minnesota. August 2022. Available online at: https://ecos.fws.gov/ServCat/DownloadFile/225001. Accessed March 2025.

USFWS. 2023a. Endangered and Threatened Wildlife and Plants; Reinstatement of Endangered Species Act Protections for the Gray Wolf (Canis lupus) in Compliance with Court Order; Final Rule. 88 Federal Register 75506. November 3, 2023.

USFWS. 2023b. Email dated January 20, from L. Toso (USFWS) to C. Tucker (WEST).

USFWS. 2023c. Variable Cuckoo Bumble Bee. Available online at: https://www.fws.gov/species/variable-cuckoo-bumble-bee-bombus-variabilis. Accessed March 2025.

USFWS. 2023d. Email from L. Toso, USFWS, to C. Tucker, Western EcoSystems Technology, Inc. (WEST). January 20, 2023.

USFWS. 2023e. Species Status Assessment for Regal Fritillary (*Argynnis* (*Speyeria*) I*dalia*): Eastern Subspecies (*Argynnis idalia Idalia*) and Western Subspecies (*A. I. Occidentalis*). Version 1.0. Prepared by USFWS South Dakota Ecological Services Field Office, Pierre, South Dakota. September 25, 2023. 179 pp. + appendices. Available online at: https://www.regulations.gov/ document/FWS-R6-ES-2023-0182-0005.

USFWS. 2023f. Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines. USFWS, Region 3, Bloomington, Minnesota. March 2023. 76 pp. Available online at: https://www.fws.gov/sites/default/files/documents/USFWS_Range-wide_IBat_%26_NLEB_Survey_Guidelines_2023.05.10_0.pdf. Accessed March 2025.

USFWS. 2024a. Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines. USFWS, Region 3, Bloomington, Minnesota. March 2024. 95 pp. Available online at: https://www.fws.gov/sites/default/files/documents/2024-04/final-usfws_range-wide_ibat-nleb_survey_guidelines_508-compliant.pdf. Accessed March 2025.

USFWS. 2024b. Endangered and Threatened Wildlife and Plants; Endangered Species Status for the Gray Wolf in the Northern Rockey Mountains and the Western United States. Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17. 89 Federal Register 8391. Accessed March 2025.

USFWS. 2024c. Species. USFWS, Washington, D.C. Available online at: https://www.fws.gov/species. Accessed March 2025.

USFWS. 2024d. Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines. USFWS, Region 3, Bloomington, Minnesota. March 2024. 95 pp. Available online at: https://www.fws.gov/sites/default/files/documents/2024-04/final-usfws_range-wide_ibat-nleb_survey_guidelines_508-compliant.pdf. Accessed July 2024.

USFWS. 2024e. Piping Plover. USFWS, Washington, D.C., Available online at: https://www.fws.gov/species/piping-plover-charadrius-melodus. Accessed March 2025.

USFWS. 2024f. Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines. USFWS, Region 3, Bloomington, Minnesota. March 2024. 95 pp. Available online at: https://www.fws.gov/ sites/default/files/documents/2024-04/final-usfws_range-wide_ibat-nleb_survey_guidelines_508-compliant.pdf. Accessed November 2025.

USFWS. 2024g. Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) Species Status Assessment. Version 1.0. USFWS, Washington, D.C. Available online at: https://www.regulations.gov/document/FWS-R7-ES-2024-0117-0008. Accessed November 2025.

USFWS. 2025a. Initial Project Scoping: IPaC - Information for Planning and Consultation. IPaC, Environmental Conservation Online System, USFWS, Washington, D.C. Available online at: https://ipac.ecosphere.fws.gov/. Accessed March 2025.

USFWS. 2025b. National Wetlands Inventory. Available online at: https://www.fws.gov/program/national-wetlands-inventory/wetlands-data. Accessed March 2025.

USFWS. 2025c. Cooperative Whooping Crane Tracking Project (CWCTP). Whooping Crane Sightings through Spring 2021. GIS Layer from CWCTP database. USFWS Nebraska Ecological Services Field Office, Grand Island, Nebraska.

USFWS. 2025d. Northern Long-Eared Bat and Tricolored Bat Voluntary Environmental Review Process for Development Projects. Version 1.1. USFWS, Washington, D.C. April 15, 2025. 32 pp. Available online at: https://www.fws.gov/sites/default/files/documents/2025-04/nleb_tcb_consultation_guidance_version-1.1_final_.pdf. Accessed March 2025.

U.S. Forest Service (USFS). 2001.The Land and Resource Management Plan for the Dakota Prairie Grasslands Northern Region 2001. USFS, Washington, D.C. Available online at: https://www.fs.usda.gov/main/dpg/landmanagement/planning. Accessed March 2025.

USFS. 2023. USFS Geodatabase [Data set]. Provided May 18, 2023, by G. Schonert (USFS).

USFS. 2024. Geodatabase [Data set]. Available online at: https://www.fs.usda.gov/r01/dpg/data-tools/gis. Accessed March 2024.

USFS. 2025a. Migration and Overwintering. Monarch Butterfly. U.S. Department of Agriculture, USFS, Washington, D.C. Available online at: https://www.fs.usda.gov/wildflowers/pollinators/Monarch_Butterfly/migration/index.shtml. Accessed September 2025.

USFS. 2025b. Monarch Butterfly Habitat Needs. U.S. Department of Agriculture, USFS, Washington D.C. Available online at: https://www.fs.usda.gov/wildflowers/pollinators/Monarch_Butterfly/habitat/_index.shtml. Accessed September 2025.

U.S. Geological Survey (USGS). 2023. USMIN Mineral Deposit Database. Available online at: https://www.usgs.gov/centers/gggsc/science/usmin-mineral-deposit-database. Accessed March 2025.

USGS. 2025. National Hydrography Dataset, Hydrography, NHDPlus Version 2, GIS data. National Map. Available online at: https://apps.nationalmap.gov/downloader/. Accessed March 2025.

Washington Department of Fish and Wildlife. 2025. Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*). Species & Habitats. WDFW, Olympia, Washington. Available online at: https://wdfw.wa.gov/species-habitats/species/bombus-suckleyi#desc-range. Accessed September 2025.

Western EcoSystems Technology, Inc. (WEST). 2024. Whooping Crane Potential Impact Assessment: Collision Mortality and Stopover Habitat Suitability. Prepared by WEST, Golden Valley, Minnesota.

Western Electricity Coordinating Council (WECC). 2024. Western Assessment of Resource Adequacy. Available online at: https://feature.wecc.org/wara/. Accessed December 2025.

Whitaker, J. O. and R. E. Mumford, eds. 2009. Myotis septentrionalis/Northern Myotis. Pp. 207-214. In: Mammals of Indiana. Indiana University Press, Bloomington, Indiana.

White, J. A., P. W. Freeman, H. W. Otto, and C. A. Lemen. 2020. Winter Use of a Rock Crevice by Northern Long-Eared Myotis (*Myotis septentrionalis*) in Nebraska. Western North American Naturalist 80(1): 114-119.

Woods, A. J., J. M. Omernik, J. A. Nesser, J. Shelden, J. A. Comstock, and S. H. Azevedo. 2002. Ecoregions of Montana. 2nd edition (color poster with map, descriptive text, summary tables, and photographs). Available online at: https://gaftp.epa.gov/EPADataCommons/ORD/Ecoregions/mt/mt_front_1.pdf. Accessed March 2025.

World Health Organization (WHO). 2007. Environmental Health Criteria 238: Extremely Low Frequency (ELF) Fields. Geneva, Switzerland.