Office of Energy Projects

FERC/EIS-0325D **November 2022**

Wahpeton Expansion Project

DRAFT ENVIRONMENTAL IMPACT STATEMENT

WBI Energy Transmission, Inc. Docket No. CP22-466-000

Abstract:

The staff of the Federal Energy Regulatory Commission (Commission) prepared a draft environmental impact statement (EIS) for the Wahpeton Expansion Project (Project) proposed by WBI Energy Transmission, Inc. (WBI Energy) in Cass and Richland Counties, North Dakota. The Project would involve construction and operation of 60.5 miles of 12-inch-diameter pipeline; minor modifications to WBI Energy's existing Mapleton Compressor Station; two new border stations; seven new block valve settings; four new pig launcher/receiver settings; and the addition of ancillary facilities such as cathodic protection and communication facilities. Additionally, WBI Energy proposes to use temporary access roads and contractor yards to support construction activities and would establish new permanent access roads to support operation of the new facilities. Construction and operation of the Project would provide about 20,600 equivalent dekatherms of natural gas per day from the existing Mapleton Compressor Station to the proposed Montana-Dakota Utilities (MDU)-Kindred and MDU-Wahpeton Border Stations to provide natural gas services to the communities of Kindred and Wahpeton, North Dakota. Commission staff conclude that construction and operation of the Project, with the mitigation measures recommended in the EIS, would result in some adverse environmental impacts; however, with the exception of climate change impacts, those impacts would not be significant. Climate change impacts are not characterized in the EIS as significant or insignificant.

Comments on the draft EIS are due to the Commission on or before 5:00 pm Eastern Time on **December 27, 2022.**

Contact: Office of External Affairs, (866) 208-FERC

Federal Energy Regulatory Commission

Office of Energy Projects

888 First Street NE, Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 4
WBI Energy Transmission, Inc.
Wahpeton Expansion Project
Docket No. CP22-466-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the Wahpeton Expansion Project, proposed by WBI Energy Transmission, Inc. (WBI Energy) in the above-referenced docket. WBI Energy requests authorization to construct and operate the Wahpeton Expansion Project which would provide an incremental 20,600 equivalent dekatherms per day of firm natural gas transportation capacity from WBI Energy's existing Mapleton Compressor Station to the proposed Montana Dakota Utilities (MDU)-Kindred and MDU-Wahpeton Border Stations to provide natural gas services to the communities of Kindred and Wahpeton, North Dakota.

The draft EIS assesses the potential environmental effects of the construction and operation of the Wahpeton Expansion Project in accordance with the requirements of the National Environmental Policy Act (NEPA). Commission staff concludes that approval of the proposed project, with the mitigation measures recommended in the EIS, would result in some adverse environmental impacts. Most of these impacts would be temporary and occur during construction (e.g., impacts on wetlands, land use, traffic, and noise). With the exception of climate change impacts that are not characterized in the EIS as significant or insignificant, Commission staff conclude that project effects would not be significant. As part of the analysis, Commission staff developed specific mitigation measures (included in the draft EIS as recommendations). Staff recommend that these mitigation measures be attached as conditions to any authorization issued by the Commission.

The Wild Rice River Route Alternative – MP 55 would affect landowners that have not been part of the FERC's environmental scoping process, as further discussed on page 4. **Therefore, by this letter we are notifying these parties of our evaluation and requesting comments about this route alternative presented in section 3.3.1 of the draft EIS.**

The draft EIS addresses the potential environmental effects of the construction and operation of the following project facilities, in Cass and Richland Counties, North Dakota:

- a new 60.5-mile-long, 12-inch-diameter natural gas pipeline;
- minor modifications to WBI Energy's existing Mapleton Compressor Station;
- a new MDU-Wahpeton Border Station;
- a new MDU-Kindred Border Station;
- seven new block valve settings;
- four new pig launcher/receiver settings; and
- ancillary facilities.

The Commission mailed a copy of the *Notice of Availability* of the draft EIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the project area. The draft EIS is only available in electronic format. It may be viewed and downloaded from FERC's website (www.ferc.gov), on the natural gas environmental documents page (https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents). In addition, the draft EIS may be accessed by using the eLibrary link on FERC's website. Click on the eLibrary link (https://elibrary.ferc.gov/eLibrary/search) select "General Search" and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e. CP22-466). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The draft EIS is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of all issues in this proceeding. Any person wishing to comment on the draft EIS may do so. Your comments should focus on draft EIS's disclosure and discussion of potential environmental effects, measures to avoid or lessen environmental impacts, and the completeness of the submitted alternatives, information and analyses. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments **on or before 5:00 pm Eastern Time on December 27, 2022**.

For your convenience, there are four methods you can use to submit your comments to the Commission. The Commission will provide equal consideration to all comments received, whether filed in written form or provided verbally. The Commission encourages electronic filing of comments and has staff available to assist you at (866)

208-3676 or FercOnlineSupport@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

1) You can file your comments electronically using the eComment feature on the Commission's website (www.ferc.gov) under the link to FERC Online. This is an easy method for submitting brief, text-only comments on a project;

2) You can file your comments electronically by using the eFiling feature on the Commission's website (www.ferc.gov) under the link to FERC Online. With filing, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." If you are filing a comment on a particular project, please select "Comment on a Filing" as the filing type; or

3) You can file a paper copy of your comments by mailing them to the Commission. Be sure to reference the project docket number (CP22-466-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment sessions its staff will conduct in the project area to receive comments on the draft EIS, scheduled as follows:

Date and Time	**Location**
Tuesday, November 29, 2022 5:00 pm – 7:00 pm	Wahpeton City Hall 1900 4th Street N Wahpeton, ND 58075 (701) 591-2110
Wednesday, November 30, 2022 5:00 pm – 7:00 pm	Kindred High School 225 Dakota Street Kindred, ND 58051 (701) 428-3177

The primary goal of these comment sessions is to have you identify the specific environmental issues and concerns with the draft EIS. Individual verbal comments will be taken on a one-on-one basis with a court reporter. This format is designed to receive the maximum amount of verbal comments, in a convenient way during the timeframe allotted.

Each comment session is scheduled from 5:00 pm to 7:00 pm Central Standard Time. You may arrive at any time after 5:00 pm. There will not be a formal presentation by Commission staff when the session opens. Comments will be taken until 7:00 pm.

Your verbal comments will be recorded by the court reporter (with FERC staff or representative present) and become part of the public record for this proceeding. Transcripts will be publicly available on FERC's eLibrary system. If a significant number of people are interested in providing verbal comments in the one-on-one settings, a time limit of 5 minutes may be implemented for each commentor. Although there will not be a formal presentation, Commission staff will be available throughout the comment session to answer your questions about the environmental review process.

It is important to note that the Commission provides equal consideration to all comments received, whether filed in written form or provided orally at a comment session.

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR Part 385.214). Motions to intervene are more fully described at https://www.ferc.gov/how-intervene. Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Route Alternative

As indicated on page 1, some landowners are receiving this draft EIS because their property has been identified as potentially being affected by the Wild Rice River Route Alternative – MP 55, which is recommended by FERC staff to avoid or lessen environmental impacts along WBI Energy's proposed pipeline route. Section 3.3.1 of the draft EIS contains our analysis and discussion of this alternative. The Commission staff wants to ensure that all potentially affected landowners have the opportunity to

participate in the environmental review process, thus staff is soliciting comments to assist with the environmental analysis of this route alternative, which will be presented in the final EIS.

Questions?

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on FERC website (www.ferc.gov) using the eLibrary link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to https://www.ferc.gov/ferc-online/overview to register for eSubscription.

Wahpeton Expansion Project
Draft Environmental Impact Statement

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

TECHNICAL ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
ACEP	Agricultural Conservation Easement Program
ACHP	Advisory Council on Historic Preservation
Agreement	Paris Climate Agreement
Alliance	Alliance Pipeline System
ANS	aquatic nuisance species
APE	area of potential effects
ATWS	additional temporary workspace
BCC	Birds of Conservation Concern
BCR	Bird Conservation Regions
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMPs	Best Management Practices
BO	Biological Opinion
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO_{2e}	carbon dioxide equivalents
CRP	Conservation Reserve Program
CWA	Clean Water Act
DASK	Dakota skipper
DOT	United States Department of Transportation
EI	Environmental Inspector
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC or Commission	Federal Energy Regulatory Commission
FSA	Farm Service Agency
FWS	United States Fish and Wildlife Service
Guided Bore Plan	Guided Bore Drilling Fluid Monitoring and Operations Plan
GHG	greenhouse gas
H_2S	hydrogen sulfide
HAPs	hazardous air pollutants
HCA	high consequences areas
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IWG	Interagency Working Group
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LNG	liquified natural gas
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
MCA	moderate consequence areas

MNDNR	Minnesota Department of Natural Resources
MDU	Montana-Dakota Utilities
MRLC	Multi-resolution Land Characteristics
NAAQS	National Ambient Air Quality Standards
NAS	Nonindigenous Aquatic Species
NDDEQ	North Dakota Department of Environmental Quality
NDDOT	North Dakota Department of Transportation
NDHFA	North Dakota Housing Finance Agency
NDGFD	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey
NDLMI	North Dakota Labor Marker Information
NDPCS	North Dakota Public Service Commission
NDPRD	North Dakota Parks and Recreation Department
NDSWC	North Dakota State Water Commission
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NLEB	Northern Long-eared bat
NNSR	Nonattainment New Source Review
NOA	Notice of Application
NOI	Notice of Intent
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSAs	noise sensitive areas
NSPS	New Source Performance Standards
OEP	Office of Energy Projects
OPP	Office of Public Participation
OSHA	Occupational Safety and Health Administration
PEM	Palustrine emergent wetland
PFO	Palustrine forested wetland
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	Plan for Unanticipated Discovery of Historic Properties or Human Remains During Construction
PLOTS	Private Land Open to Sportsmen
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Wahpeton Expansion Project
PSD	Prevention of Significant Deteriorations
PTE	potential to emit
SCC	social cost of carbon
SC-GHG	social costs of greenhouse gases
SHPO	State Historic Preservation Officer
SPCC Plan	Spill Prevention, Control and Countermeasures Plan
SSURGO	Soil Survey Geographic Database
tpy	tons per year
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

USGCRP	United States Global Change Research Program
USGS	United States Geological Survey
VOCs	volatile organic compounds
WBI Energy	WBI Energy Transmission, Inc.
WEG	Wind Erodibility Group
WPA	Waterfowl Protection Area
WPFO	Western prairie fringed orchid
NWI	National Wetland Inventory

EXECUTIVE SUMMARY

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this draft Environmental Impact Statement (EIS) to fulfill requirements of the National Environmental Policy Act of 1969 (NEPA) and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations, Part 380 (18 CFR 380). This EIS assesses the potential environmental impacts that could result from constructing and operating the Wahpeton Expansion Project (Project).

On September 27, 2021, WBI Energy Transmission, Inc. (WBI Energy) entered into FERC's Pre-Filing Process in Docket No. PF21-4-000. On May 27, 2022, WBI Energy filed a formal application with FERC in Docket No. CP22-466-000 pursuant to section 7(c) of the Natural Gas Act and Parts 157 and 284 of the Commission's regulations to construct, own, and operate an interstate natural gas pipeline and ancillary facilities in Cass and Richland Counites, North Dakota. The Project would provide firm transportation service for 20,600 equivalent dekatherms of natural gas per day from WBI Energy's existing Mapleton Compressor Station to the proposed Montana Dakota Utilities (MDU)-Kindred and MDU-Wahpeton Border Stations[1] to provide natural gas services to the communities of Kindred and Wahpeton, North Dakota.

The purpose of the EIS is to inform FERC decision makers, the public, and the permitting agencies about the potential environmental impacts of the proposed Project and its alternatives and recommend mitigation measures as needed that would reduce adverse impacts to the extent practicable. We prepared our analysis based on information provided by WBI Energy and further developed from data requests; field investigations; scoping; literature research; and contacts with or comments from federal, state, and local agencies, Native American tribes, and individual members of the public.

FERC is the federal agency responsible for authorizing interstate natural gas transmission facilities under the Natural Gas Act and is the lead federal agency for the preparation of this EIS. No cooperating agencies participated in preparation of this EIS.

PROPOSED ACTION

The Project would include construction of the following facilities in Cass and Richland Counites North Dakota:

- a new 60.5-mile-long, 12-inch-diameter natural gas pipeline;
- minor modifications to WBI Energy's existing Mapleton Compressor Station;
- a new MDU-Wahpeton Border Station;
- a new MDU-Kindred Border Station;
- seven new block valve[2] settings;
- four new pig launcher/receiver[3] settings; and
- ancillary facilities.

WBI Energy would construct the Project using a 75-foot-wide construction right-of-way in most circumstances, along with additional temporary workspace, 5 contractor yards, and 87 access roads. During

[1] A border station, also known as a meter and regulating station, is an aboveground facility that contains the equipment necessary to measure the volume of gas flowing in a pipeline.

[2] A valve is an aboveground facility that is capable of controlling the flow of gas in a pipeline.

[3] A pig is a device used to clean or inspect a pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.

Project operation, WBI Energy would maintain a 50-foot-wide permanent right-of-way centered over the pipeline, along with 7 permanent access roads serving Project facilities.

WBI Energy proposes to begin construction of some facilities in the 3rd quarter of 2023. WBI Energy proposes to begin full construction of the Project in April 2024 and to conclude by October 2024. WBI Energy anticipates commencing service in November 2024.

PUBLIC INVOLVEMENT

On September 27, 2021, the Commission granted WBI Energy's request to use FERC's Pre-Filing Process in Docket No. PF21-4-000. The Pre-Filing Process is designed to encourage early involvement by citizens, governmental entities, non-governmental organizations, and other interested parties in the development of proposed natural gas transmission projects, prior to the filing of a formal application. During the Pre-Filing Process, we[4] worked with WBI Energy and interested stakeholders, including federal and state agencies, to identify and resolve Project-related issues. We participated in regular conference calls with WBI Energy to discuss relevant Project issues, and we encouraged WBI Energy to communicate frequently with the public and resource agencies.

WBI Energy conducted two landowner information meetings on September 15 and 16, 2021 in Wahpeton and Kindred, North Dakota. In addition, WBI Energy conducted four public open house meetings in Kindred and Wahpeton on November 16 and 17, 2021, with two separate sessions held each day. FERC staff attended all four open house meetings virtually. The open houses provided an opportunity for stakeholders to ask questions and express concerns. WBI Energy mailed letters to landowners and stakeholders inviting them to the meetings. Approximately 50 individuals attended the four open house sessions. WBI Energy discussed general Project information, routing, surveys, timeline, road crossings, drain tiles, restoration, and the possibility for farm taps.

On January 4, 2022, we issued in Docket No. PF21-4-000 a *Notice of Scoping Period Requesting Comments on Environmental Issues for the Planned Wahpeton Expansion Project and Notice of Virtual Public Scoping Sessions*. This notice was mailed to approximately 366 entities, including affected landowners; federal, state, and local officials; Native American tribes; agency representatives; environmental and public interest groups; and local libraries and newspapers. The 30-day comment period was open from January 4 to February 3, 2022. We hosted two virtual public scoping meetings on January 25 and January 27, 2022, and received one verbal comment. We also received eight comment letters during the Pre-Filing Process.

On June 10, 2022, FERC issued a Notice of Application announcing that WBI Energy filed its application with FERC. This notice opened another comment period and indicated that the deadline for filing a motion to intervene would end on July 1, 2022.

On June 22, 2022, we issued in Docket No. CP22-466-000 the *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Wahpeton Expansion Project, Request for Comments on Environmental Issues, and Schedule for Environmental Review.* This notice was mailed to the same list as described above. We received 26 comment letters and/or motions to intervene after the application was filed.

This draft EIS was filed with the U.S. Environmental Protection Agency, and the Notice of Availability of the draft EIS is being mailed to the same list described above, with the addition of individuals who provided scoping comments or asked to be on the mailing list (see appendix A). A formal notice

[4] The pronouns "we," "us," and "our" refer to the environmental staff of the Federal Energy Regulatory Commission's Office of Energy Projects.

indicating that the draft EIS is available for review and comment will be published in the Federal Register. All comments received on the draft EIS related to environmental issues will be addressed in the final EIS.

PROJECT IMPACTS AND MITIGATION

We evaluated the potential impacts of construction and operation of the Project on geology; soils; water use and quality; wetlands; fisheries, vegetation; wildlife; special-status species; land use, recreation, and visual resources; environmental justice communities, cultural resources; socioeconomics, air quality and noise; reliability and safety, and cumulative impacts. Where necessary, we recommend additional mitigation to minimize or avoid these impacts. Section 5.2 of the EIS contains a compilation of our recommendations.

Overall, construction of the Project would disturb about 791.5 acres of land and open water, and operation of the Project would require about 372.5 acres. Approximately 92 percent of the Project would be within agricultural land. For the land not used permanently to operate the Project, WBI Energy would stabilize and restore the remaining land disturbed during construction so that it would return to pre-construction uses.

Based on our analysis, scoping, and agency consultations, the major issues associated with the Project would be impacts on soils, surface water, wetlands, vegetation, environmental justice, air quality and climate change, and noise.

Soils

Soil characteristics reviewed for the Project identified that most (about 75 percent) of the soils that would be crossed are classified as Prime Farmland or Farmland of Statewide Importance. Small percentages of soils that are susceptible to water and wind erosion or have limitations regarding revegetation would be crossed.

Construction of the Project could affect soil resources by increasing the potential for erosion, compaction, mixing of topsoil, rutting, and spills. In accordance with WBI Energy's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan), WBI Energy would install necessary temporary erosion control devices during construction to minimize potential erosion related impacts and keep separate stockpiled topsoil and subsoil. Following construction, ruts would be repaired, agricultural lands would be decompacted and restored and agricultural activities would be allowed to resume within the pipeline right-of-way. WBI Energy's S*pill Prevention, Control, and Countermeasure (SPCC) Plan* specifies measures and cleanup procedures that would be used in the event of spills or leaks of hazardous materials. Given the characteristics of Project area soils and the impact minimization and mitigation measures that would be implemented through adherence to WBI Energy's Plan, SPCC Plan, and *Plan for Unanticipated Discovery of Contaminated Environmental Media*, we conclude that impacts on soils would not be significant.

Surface Water

The Project is within the Devils Lake-Sheyenne and Upper Red River watersheds. WBI Energy identified 20 waterbodies during field surveys for the Project, which include 10 ephemeral and 9 perennial waterways that would be crossed, and one ephemeral waterbody that would be within the workspace, but not crossed. Named perennial crossings include the Maple River, Sheyenne River, Pitcairn Creek, Antelope Creek, and Wild Rice River (five individual crossings of the Wild Rice River are currently planned).

Nineteen of the waterbodies, which include all perennial crossings, would be crossed using the guided bore method. The guided bore method eliminates direct impacts to banks and beds of waterbodies,

as only foot traffic and limited vegetation clearing would be necessary between the bore entry and exit points.

WBI Energy would construct the Project in accordance with its *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), its *Guided Bore Drilling Fluid and Monitoring and Operations Plan*, its *Spill Prevention, Containment, and Countermeasures Plan* and applicable permit conditions to prevent or mitigate contamination from spills in waterbody crossings. Surface waters could be used by WBI Energy for hydrostatic testing, use in guided bores, and for dust control during construction. Water uptake and discharge would be conducted in accordance with WBI Energy's Procedures and applicable North Dakota state permits.

With implementation of WBI Energy's project-specific plans and proposed mitigation measures discussed in this EIS, we conclude that impacts on surface waters would be adequately minimized and not significant.

Wetlands

Project workspaces would cross 55 wetlands. Fifty-three are classified as palustrine emergent and the remaining two are classified as palustrine forested. Twenty-two of the wetlands would be crossed via the guided bore method, and temporary impacts on these wetlands is anticipated to be from a temporary travel lane during construction. Nineteen of the wetlands, including the two palustrine forested wetlands, would be crossed via the open-cut construction method. The remaining 14 wetlands are within temporary construction workspace and would not be directly crossed by the pipeline. A total of 10.8 acres of wetlands would be temporarily impacted during construction. The primary impact of Project construction on wetlands would be the potential alteration of current or potential wetland vegetation due to clearing, excavation, rutting, compaction, and mixing of topsoil and subsoil.

Operational impacts are anticipated at three wetlands. Woody vegetation would be removed from two wetlands during construction. Following restoration, a 10-foot-wide corridor would be maintained in an herbaceous state through these wetlands, along with selective cutting of woody vegetation within 15 feet of the pipeline, resulting in a permanent wetland conversation from forested to emergent. WBI Energy proposes to construct a new permanent access road to access Block Valve 4 that would result in a minimal permanent impact to one roadside ditch area classified as a wetland.

With the implementation of WBI Energy's project-specific plans, and the proposed mitigation measures discussed in this EIS, significant impacts on wetlands due to construction and operation of the Project are not anticipated.

Vegetation

Approximately 92 percent of the vegetation types that would be crossed by the Project would be agricultural lands. The Project would not cross and federal or state-designated sensitive vegetation communities or locations of rare plants. WBI Energy conducted field surveys to identify noxious or invasive plant species. Only Canada thistle was identified within the survey corridor, in 28 locations. Construction and operation of the pipeline would also result in temporary and permanent impacts on 1.8 acres forested land, comprising less than one percent of the Project area. Impacts on forest would be minor in relation to overall land impacts from the Project. With the implementation of restoration measures outlined WBI Energy's Plan and the *Noxious Weeds Management Plan,* we conclude that impacts on vegetation would not be significant.

Environmental Justice

According to the current U.S. Census Bureau information, minority and low-income populations exist within the Project area. Of the 10 block groups within the geographic scope of the Project, 5 block groups are considered environmental justice communities. Four of these block groups have a minority population that either exceeds 50 percent or is meaningfully greater than their respective counties. The other block group has a minority population that exceeds 50 percent or is meaningfully greater than their respective counties and a low-income population that is equal to or greater than its respective county. Project work within the identified environmental justice communities includes the construction and operation of portions of the pipeline, modifications to the existing Mapleton Compressor Station; construction and operation of new Block Valves 1, 2, and 5 and associated pig launcher/receivers; nighttime guided boring at mileposts (MP)s 1.23, 5.94, and 40.97; and use of the Kost, Comstock North, Wahpeton City, and Comstock South Yards. Impacts associated with these project facilities would be predominantly borne by environmental justice communities; however, impacts associated with the facilities would be less than significant.

Potential impacts on area residents may include traffic delays during construction, impacts on groundwater, changes in the existing viewsheds during construction, and air emissions and noise during construction of the pipeline segment. There would be temporary impacts on local traffic based on an increase of construction traffic and construction of the pipeline across roads. WBI Energy would employ traffic control measures to ensure the safety of the local population and minimize disruption to normal traffic flow. One water well was identified within 150 feet of construction workspaces. WBI Energy would follow its Plan and its *Spill Prevention, Containment, and Countermeasures Plan* and would provide pre- and post-construction testing with landowner permission.

Construction and operation of the pipeline facilities would result in minor temporary and permanent visual impacts, including temporary viewshed impacts for environmental justice communities. In addition, construction of aboveground facilities and continued vegetation clearing would create permanent impacts on localized viewsheds. However, with the visual setting already influenced by the presence of other commercial or industrial facilities, existing screening, and/or the distance between the proposed facilities and potential receptors, impacts on all of the viewsheds would be effectively minimized.

Based on air quality analysis and proposed minimization efforts, we conclude that air quality impacts from construction and operation of the pipeline facilities would not result in a significant impact on local or regional air quality for environmental justice communities.

Aside from the insignificant impacts associated with construction and operation of portions of the Project in environmental justice communities, the Project would not have disproportionately high and adverse impacts on environmental justice communities.

Air Quality and Climate Change

The Project would not result in the installation or operation of significant sources of air pollutants. The Project is not subject to New Source Review or Title V (major source) operating permit program. The Project area is not classified as nonattainment or maintenance for any criteria pollutant; therefore, the General Conformity Rule (40 CFR 51.850 to 51.860 and 40 CFR 93.150 to 93.160) does not apply.

Construction emissions would include dust from earthmoving and heavy equipment use, that would vary from day to day depending on the level of activity, the specific operations, and the prevailing weather. Predominantly, these emissions would likely result from equipment traffic over existing unpaved access roads and wind. Emissions would also be produced from fuel combustion in construction equipment engines. Vehicles and equipment would use gasoline or diesel fuel compliant with current federal

regulations and would be operated with required emission control devices. Equipment diesel fuel would meet current requirements for using ultra-low-sulfur (15 parts per million) diesel fuel specifications.

WBI Energy would minimize wind erosion and fugitive dust emissions during construction through implementation of its *Fugitive Dust Control Plan*. This plan would prescribe mitigation measures such as regularly watering dusty areas, limiting activity during high winds, and other similar mitigation measures.

Fugitive dust and air pollutants from the internal combustion engines of construction equipment would be limited to the immediate vicinity of the Project area and would be short term. As the construction spread moves along the right-of-way, emission sources would move in tandem, and would cease when construction is complete. Emissions from construction are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard because the construction equipment would be operated on an as-needed basis. Through the implementation of the work practices described above and given the short duration of construction activities, the temporary emissions during construction of the Project would be minor, and the impact would be localized. Therefore, we conclude that emissions generated during construction would not have significant impacts on local or regional air quality.

Fugitive emissions may occur at the proposed aboveground facilities. Small amounts of natural gas would also be released during pigging operations of the installed pipeline. These emissions would be minor in nature and routine pigging is not anticipated during operation of the pipeline. As part of its standard operations, WBI Energy would monitor and repair leaks across its system according to appropriate safety requirements. We conclude that emissions generated during operation would not have significant negative impacts on local or regional air quality.

Construction and operation of the Project would increase the atmospheric concentration of greenhouse gases (GHG) in combination with past, current, and future emissions from all other sources globally and contribute incrementally to future climate change impacts. The construction-related emissions from the Project could potentially increase CO_2e emissions based on the 2020 U.S. inventory by 0.0003 percent. In subsequent years, Project operations based on the maximum direct GHG emissions scenario and downstream combustion of the subscribed natural gas throughput could potentially increase emissions by 0.0076 percent based on the national 2020 Inventory. The Project would allow WBI Energy to provide 20,600 dekatherms per day of incremental firm natural gas transportation capacity that is fully subscribed via long-term, binding precedent agreements with MDU. According to WBI Energy, the Project would provide additional natural gas supply to the Wahpeton community in North Dakota where MDU has existing infrastructure. In addition, the Project would also provide MDU with the ability to provide new natural gas services to the Kindred community in North Dakota. Ultimately, this EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward[5].

Noise

WBI Energy identified noise-sensitive areas within 0.5 mile of four guided bore locations that would require 24-hour construction. Therefore, WBI Energy completed an acoustical assessment of cumulative noise impacts that these locations. The EPA has indicated that a day-night noise level (L_{dn}) of 55 decibels protects the public from indoor and outdoor activity interference. FERC has adopted this criterion, and we used it to evaluate the potential noise impacts from the Project at pre-existing noise-sensitive areas such as schools, hospitals, and residences. WBI Energy's assessment identified noise levels

[5] Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, 178 FERC ¶ 61,108 (2022); 178 FERC ¶ 61,197 (2022).

would exceed 55 dBA L_{dn} at the Sheyenne River crossing. WBI Energy would notify all affected landowners within 0.5 mile of the Sheyenne River guided bore prior to commencing boring activities. Based on our recommendation for WBI Energy to develop a noise mitigation plan (in section 4.9.2), the Project would not result in significant noise impacts on local residents and the surrounding communities.

The Project includes modifications to the existing Mapleton Compressor Station for installation of metering and regulating equipment. Noise modeling of the existing Mapleton Compressor Station and new metering and regulating equipment estimated noise levels would be less than 55 dBA L_{dn} at the three nearby noise-sensitive areas. Therefore, we conclude the Project would not result in significant noise impacts on local residents.

Alternatives

We evaluated the no-action alternative, system alternatives (i.e., the potential use of other natural gas transmission systems in the region), and pipeline route alternatives. The Commission will ultimately determine the Project need and could choose the no-action alternative. Implementing the no-action alternative would result in no impacts on the environment; however, the Project's goals would not be met. We considered five system alternatives, but determined that none offered a significant environmental advantage over the proposed action.

Our review of resource impacts resulted in identification of one area that we determined merited evaluation of a route alternative. Based on our inquiries, WBI Energy filed a potential alternative route, the Wild Rice River Route Alternative - MP 55, which is shorter, reduces the number of waterbodies crossed from four to one (including avoidance of both crossings of the Wild Rice River), reduces impacts on riparian forest, agricultural land, and the number of landowners, and avoids a newly discovered archaeological site on the proposed route. We evaluated the Wild Rice River Route Alternative - MP 55 and concluded that it had a clear environmental advantage over the proposed route at this location and would meet the Project objective. Accordingly, we recommended that WBI Energy adopt it into its proposed Project. Landowners along this alternative only recently have been added to the environmental review mailing list. Therefore, we encourage those landowners to provide us additional comments on the proposed route and Wild Rice River Route Alternative - MP 55 during the draft EIS comment period.

Based on our evaluations of the alternative routes for the proposed pipeline, we conclude that the pipeline route alternatives do not offer a significant environmental advantage when compared to the proposed route and therefore, are not preferable to the proposed action, with the exception of the Wild Rice River Route Alternative - MP 55, which we are recommending. Therefore, we conclude that the proposed action, as modified by our recommended mitigation measures which includes incorporating the Wild Rice River Route Alternative - MP 55, is the preferred alternative to meet the Project objectives.

MAJOR CONCLUSIONS

As described in this executive summary and throughout the environmental analysis section of this draft EIS, we conclude that construction and operation of the Project would result in some adverse environmental impacts. Most of these impacts would be temporary and occur only during construction. Impacts on environmental justice communities from the Project as a whole would not be disproportionately high and adverse. With implementation of WBI Energy's impact avoidance, minimization, and mitigation measures, as well as their adherence to our recommendations, we conclude that Project effects would be reduced to less-than-significant levels, except for climate change impacts that are not characterized in this EIS as significant or insignificant.

In addition, we recommend additional mitigation measures that WBI Energy should implement to further reduce the environmental impacts that would otherwise result from construction and operation of the Project. We will recommend that these mitigation measures be attached as conditions to any authorization issued by the Commission. These recommended mitigation measures are presented throughout section 4 of the draft EIS in bulleted, bold text and are summarized in section 5.2.

1.0 INTRODUCTION

On May 27, 2022, WBI Energy Transmission, Inc. (WBI Energy) filed an application with the Commission (Docket No. CP22-466-000) pursuant to section 7(c) of the Natural Gas Act (NGA), as amended, and Part 157 of the Commission's regulations. WBI Energy is seeking authorization to construct an approximately 61-mile-long, 12-inch-diameter natural gas pipeline from Mapleton, North Dakota to Wahpeton, North Dakota; a new Montana-Dakota Utilities (MDU) Kindred Border Station and a new MDU-Wahpeton Border Station; appurtenant facilities, including block valve settings and new pig launchers and receivers; and make minor modifications to its existing Mapleton Compressor Station. The WBI Expansion Project (Project) would provide firm transportation service for 20,600 equivalent dekatherms of natural gas per day from WBI Energy's existing Mapleton Compressor Station to the proposed MDU-Kindred and MDU-Wahpeton Border Stations to provide natural gas services to the communities of Kindred and Wahpeton, North Dakota. Prior to filing its application, WBI Energy participated in the Commission's Pre-Filing Process for the Project under Docket No. PF21-4-000.

The staff of the Federal Energy Regulatory Commission (Commission or FERC) prepared this draft environmental impact statement (EIS) in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the Code of Federal Regulations Parts 1500–1508 (2020) [40 CFR 1055–1508]) and the Commission's implementing regulations under 18 CFR 380.

FERC is the lead federal agency for authorizing interstate natural gas transmission facilities under the NGA. No other agencies were elected to become cooperating agencies for the development of the EIS. The EIS is an integral part of the Commission's decision-making process on whether to issue WBI Energy a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed facilities.

We[6] prepared this EIS to assess the environmental impacts that would likely occur as a result of construction and operation of the Project. The Project would include construction of the following facilities in Cass and Richland Counties, North Dakota:

- a new 60.5-mile-long, 12-inch-diameter natural gas pipeline;
- minor modifications to WBI Energy's existing Mapleton Compressor Station;
- a new MDU-Wahpeton Border Station;
- a new MDU-Kindred Border Station;
- seven new block valve settings;
- four new pig launcher/receiver settings; and
- ancillary facilities, such as cathodic protection instruments.

See figure 1-1 for the Project location. Additionally, 80 temporary access roads, 7 permanent access roads, and 5 contractor yards are proposed for use during construction of the Project.

[6] The pronouns "we," "us," and "our" refer to the environmental staff of the Federal Energy Regulatory Commission's Office of Energy Projects.

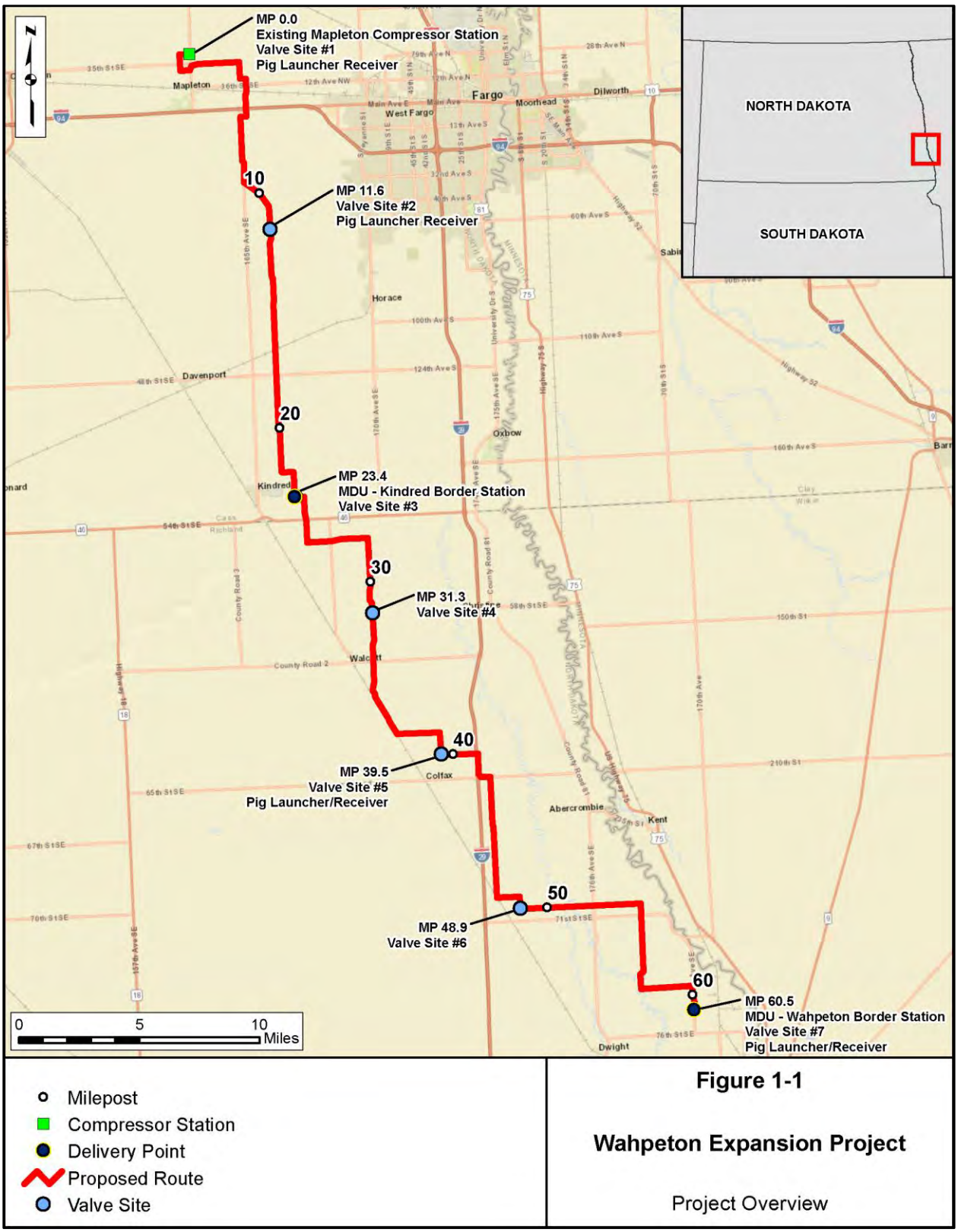


Figure 1-1

Wahpeton Expansion Project

Project Overview

WBI Energy has requested a Certificate by July 2023. WBI Energy anticipates it would commence construction of the Project following the receipt of FERC authorization and all other applicable permits, authorizations, and approvals. WBI Energy proposes to begin construction and preparation of the contractor yards in the fall of 2023, with pipeline construction proposed to begin in April 2024.

WBI Energy proposes to conclude construction activities in October 2024, for an in-service date in November 2024. A prerequisite for in-service approval would be FERC's determination that restoration (e.g., recontouring and reseeding) is proceeding in a satisfactory manner.

1.1 PROJECT PURPOSE AND NEED

According to WBI Energy, a binding precedent agreement was reached with MDU to provide 20,600 equivalent dekatherms per day of firm natural gas transportation that would be delivered to the proposed new MDU-Kindred and MDU-Wahpeton Border Stations. WBI Energy indicates that the additional natural gas delivery is required to support the growing demand for natural gas in southeastern North Dakota. The Project would provide additional natural gas supply to the Wahpeton community in North Dakota where MDU has existing infrastructure. In addition, the Project would also provide MDU with the ability to provide new natural gas services to the Kindred community in North Dakota.

Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on both economic issues, including need, and environmental impacts. Environmental impact analyses and mitigation development are important factors in the overall public interest determination.

1.2 PURPOSE AND SCOPE OF THIS EIS

The principal purposes in preparing this EIS are to:

- identify and assess potential impacts on the human environment that would result from implementation of the proposed action;
- identify and assess reasonable alternatives to the proposed action and/or specific mitigation measures that would avoid or minimize environmental impacts and adverse effects on the human environment; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

The topics addressed in this EIS include geology; soils; water use and quality; wetlands; vegetation; wildlife; threatened, endangered, and special status species; land use, recreation, and visual resources; cultural resources; socioeconomics and environmental justice; air quality; noise; reliability and safety; cumulative impacts, including climate change; and alternatives. This EIS describes the affected environment as it currently exists, discusses the potential environmental consequences of the proposed Project, and compares the Project's potential impact to that of identified alternatives. This EIS also presents our conclusions and recommended mitigation measures. We will recommend to the Commission that these recommended mitigation measures (indicated with bold type in the text and summarized in section 5.2 of this EIS) be included as conditions to any Certificate issued for the Project.

1.2.1 Federal Energy Regulatory Commission

FERC is the federal agency responsible for authorizing interstate pipeline facilities, LNG facilities on interstate pipeline systems, and LNG import and export terminals. The identification of environmental

impacts related to the construction and operation of the Project, and the mitigation of those impacts, as disclosed in this EIS, would be components of the Commission's decision-making process. The Commission would issue its decision in an Order. If the Project is approved, the Order would specify that the pipeline and related facilities can be constructed and operated under the authority of section 7 of the NGA. The Commission may attach environmental conditions to the Order that would be enforceable actions to assure that the proper mitigation measures are implemented during construction and prior to the Project going into service.

The Energy Policy Act of 2005 provides that FERC shall act as the lead agency for coordinating all applicable authorizations related to jurisdictional natural gas facilities and for purposes of complying with NEPA. Based on its authority under the NGA, FERC is the lead agency for preparation of this EIS in compliance with the requirements of NEPA, the CEQ regulations for implementing NEPA (40 CFR 1500-1508), and FERC regulations implementing NEPA in 18 CFR 380. As the lead federal agency for the Project, FERC is required to comply with applicable statutes; for this Project, that includes section 7 of the Endangered Species Act of 1973, as amended (ESA) and section 106 of the National Historic Preservation Act (NHPA). Both statutes have been taken into account in the preparation of this EIS. The Commission will use this document to consider the environmental impacts that could result if it issues a Certificate to WBI Energy under section 7(c) of the NGA.

Other regulatory agencies also may include terms and conditions or stipulations as part of their permits or approvals. While there would be jurisdictional differences between the FERC's and other agencies' conditions, WBI Energy's environmental inspection program for the Project would address all environmental or construction-related conditions or other permit requirements placed on WBI Energy by all regulatory agencies.

The EIS provides a basis for coordinated federal decision-making in a single document, avoiding duplication among federal agencies in the NEPA environmental review process. Accordingly, other federal, state, and local agencies may use this EIS in approving or issuing permits for all or part of the proposed Project. Federal, state, and local permits, approvals, and consultations for the Project are discussed in section 1.5.

1.3 PUBLIC REVIEW AND COMMENT

On September 27, 2021, the Commission granted WBI Energy's request to use FERC's Pre-Filing Process in Docket No. PF21-4-000. The Pre-Filing Process is designed to encourage early involvement by citizens, governmental entities, non-governmental organizations, and other interested parties in the development of proposed natural gas transmission projects, prior to the filing of a formal application. During the Pre-Filing Process, we worked with WBI Energy and interested stakeholders, including federal and state agencies, to identify and resolve Project-related issues. We participated in regular conference calls with WBI Energy to discuss relevant Project issues, and we encouraged WBI Energy to communicate frequently with the public and resource agencies throughout the Pre-Filing Process.

WBI Energy conducted two landowner information meetings on September 15 and 16, 2021, in Wahpeton and Kindred, North Dakota. In addition, WBI Energy conducted four public open house meetings in Kindred and Wahpeton on November 16 and 17, 2021, with two separate sessions held each day. WBI Energy mailed letters to landowners and stakeholders inviting them to the open house meetings. FERC staff attended all four open house meetings virtually. The open houses provided an opportunity for stakeholders to ask questions and express concerns. Approximately 50 individuals, in total, attended the four open house sessions. WBI Energy discussed general Project information as well as issues related to routing, surveys, timeline, road crossings, drain tiles, restoration, and the possibility for farm taps. WBI Energy maintains a Project-specific website (https://www.wbienergy.com/projects/wahpeton/) and also has

a toll-free telephone number (1-844-825-9397) and email address (info@WBIEnergy.com) that stakeholders can use to contact WBI Energy about the Project.

On January 4, 2022, we issued in Docket No. PF21-4-000 a *Notice of Scoping Period Requesting Comments on Environmental Issues for the Planned Wahpeton Expansion Project and Notice of Virtual Public Scoping Sessions*. This notice was mailed to approximately 366 entities, including affected landowners (as defined in the Commission's regulations); federal, state, and local officials; Native American tribes; agency representatives; environmental and public interest groups; and local libraries and newspapers. This notice also initiated consultation for the Project under section 106 of the NHPA. The 30-day comment period was open from January 4, 2022 to February 3, 2022. Comments received in response to the scoping notice are summarized below. We hosted two virtual public scoping meetings on January 25 and January 27, 2022, and received one verbal comment. We also received eight comment letters during the Pre-Filing Process.

On June 10, 2022, FERC issued a Notice of Application (NOA) announcing that WBI Energy had filed its formal application with FERC. The NOA opened another comment period and announced the deadline for filing a motion to intervene, which ended on July 1, 2022.

On June 22, 2022, we issued in Docket No. CP22-466-000 the *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Wahpeton Expansion Project, Request for Comments on Environmental Issues, and Schedule for Environmental Review.* This notice was mailed to the same list as described above. Comments received in response to the Notice of Intent are summarized below.

This draft EIS was filed with the U.S. Environmental Protection Agency (EPA), and the Notice of Availability of the draft EIS is being mailed to federal, state, and local government agencies; elected officials; Native American tribes; affected landowners; local libraries and newspapers; intervenors in FERC's proceeding; and other interested parties (i.e., individuals who provided scoping comments or asked to be on the mailing list). The distribution list for the Notice of Availability of the draft EIS is provided in appendix A. A formal notice indicating that the draft EIS is available for review and comment will be published in the Federal Register. All comments received on the draft EIS related to environmental issues will be addressed in the final EIS.

1.3.1 Summary of Submitted Alternatives, Information, and Analyses

We received eight comment letters during the period following the Notice of Scoping. Written comments were filed to the docket by the North Dakota Parks and Recreation Department (NDPRD) (regarding managed lands and rare species), the North Dakota Game and Fish Department (NDGFD) (regarding wetlands, woody vegetation, fish and wildlife, pipeline valves, aquatic nuisance species, and raptors), the U.S. Fish and Wildlife Service (FWS) (regarding raptors, migratory birds, listed species, and managed lands), the EPA (regarding purpose and need, air quality, climate change/greenhouse gases, water resources, wetlands and riparian areas, and environmental justice), the U.S. Bureau of Land Management (BLM) (no comments at this time), the North Dakota Department of Transportation (NDDOT) (crossing permits), and the North Dakota Department of Environmental Quality (NDDEQ) (regarding waterbodies, spills, 303 (d) listed waterbodies, and air emissions). We received one comment from Michael J. Dennis, on behalf of landowner Larry J. Dennis, during our virtual scoping sessions regarding the presence of a possible archaeological site. WBI Energy provided responses to the scoping comments on March 17, 2022 (Accession Number 20220217-5129)[7].

[7] To find documents by accession number, go to the FERC website at www.ferc.gov using the eLibrary link. Click on the eLibrary link, click on "General Search", use the drop down menu in the upper left box to select "Accession", and enter the accession number in the adjacent box (to the right). For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or (866) 208-3676, or for TTY, contact (202) 502-8659.

We received two letters following the NOA, including one letter of Project support and one motion to intervene in the proceeding. We received 23 filings after we issued the Notice of Intent. Fourteen were comment letters (including one duplicate filing) filed in support of the proposed Project and six were from entities requesting motions to intervene in the proceeding. The remaining three were filed by the BLM, NDPRD, and EPA. The BLM indicated it had no comments at this time. The NDPRD indicated that there may be populations of the western prairie fringed orchid located near the Project area. However, the NDPRD deferred further comment regarding this plant to the FWS. Region 8 of the EPA provided comments requesting that we take into consideration its comments regarding climate change, environmental justice (including impacts on communities, outreach, and engagement with minority and low-income populations), and cumulative impacts during the development of the EIS. One additional letter was filed by the NDDOT following the close of the NOI scoping period, indicating that the Project would not have adverse impacts, but that applicable permits would be required.

This EIS addresses the potential environmental impacts of WBI Energy's Project and the concerns identified by the agencies that responded to the Notice of Scoping, the Notice of Intent, as well as concerns identified by commenters and other permitting or resource agencies, and our own independent evaluation of environmental resource impacts and other issues. The environmental comments received in response to our Notices are summarized in table 1.3-1 and are further addressed, as applicable, in the relevant sections of this EIS as noted in the table. A listing of all comments received is provided in appendix B. Non-environmental comments, such as those declaring general support for the Project, or that focused on general energy policy concerns were noted but are considered outside the scope of the EIS.

TABLE 1.3-1

Environmental Issues and Concerns Raised During Public Scoping for the Project

Issue	EIS Section Addressing Issue
General Project Description	2.0
Future Limitations Within the Permanent Easement	4.5
Spills	2.3, 4.3.2
Waste Disposal	2.3
Alternatives	3.0
Soils	4.2
Farmland and Farming	4.2, 4.5
Erosion	4.2, 4.3
Vegetation	4.4.2
Forest and Woody Vegetation	4.4.2
Water Resources, Wetlands and Fisheries	4.3, 4.4
Groundwater	4.3.1
Waterbodies and Water Quality	4.3.2
Stormwater Runoff	4.3.2
Section 303(d) Waterbodies	4.3.2
Riparian Areas	4.3, 4.4.2
Fisheries	4.4.1
Nuisance Species	4.4.2
Wildlife and Threatened and Endangered Species	4.4
Raptors, Bald and Golden Eagle Protection Act	4.4.3
Migratory Bird Treaty Act	4.4.3

TABLE 1.3-1

Environmental Issues and Concerns Raised During Public Scoping for the Project

Issue	EIS Section Addressing Issue
Western Prairie Fringed Orchid	4.4.4
Environmental Justice Communities	4.7
Land Use, Visual Resources, and Recreation	4.5
Drain Tiles	4.5
Specially Managed Lands	4.5
Cultural Resources	4.6
Native American Sites	4.6
Air Quality	4.8
Air Emissions and Mitigation	4.8
Climate Change and Greenhouse Gases	4.8
Pipeline Safety	4.10
Pipeline Damage Due to Farming	4.10
Valves	4.10
Maintenance	2.5, 4.10
Cumulative Impacts	4.11

1.4 NON-JURISDICTIONAL FACILITIES

Under section 7 of the NGA, FERC is required to consider, as part of a decision to authorize jurisdictional facilities, all facilities that are directly related to a proposed project where there is sufficient federal control and responsibility to warrant environmental analysis as part of the NEPA review. Some proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These "non-jurisdictional" facilities may be integral to the need for the proposed facilities, or they may be merely associated as minor components of the jurisdictional facilities that would be constructed and operated as a result of authorization of the proposed facilities.

WBI Energy identified the need to obtain electricity from the local electrical utility at both the Kindred and Wahpeton Border Stations. WBI Energy anticipates that electrical facilities (including a transformer and meter socket) would be constructed and operated by Dakota Valley Electric Cooperative and Cass County Electric Cooperative at the Kindred (below ground electrical facilities) and Wahpeton (aboveground electrical facilities) Border Stations, respectively. MDU would also construct a line heater, regulation, and over-pressure protection facilities at both border stations. Communication facilities such as underground digital subscriber lines and/or cellular service would also be installed at the Kindred (expected provider Century Link) and Wahpeton (expected provider MLGC) Border Stations. The abovementioned facilities would be within or adjacent to the proposed WBI Energy facility boundaries. At the seven block valve locations electrical service would be installed and communications systems would operate through cellular, fiber optic cable, or both.

As discussed in section 1.1, the proposed Project is designed to establish new natural gas service to Kindred and provide additional natural gas supply to Wahpeton. To achieve this, MDU would be required to construct additional natural gas connection and distribution facilities. The gas distribution facilities would include the construction of approximately 2.3 miles of new 6-inch-diameter pipeline, 0.7 mile of 4-inch-diameter pipeline, and 3.3 miles of 2-inch-diameter pipeline from the Kindred Border Station. Approximately 92 percent of the distribution pipelines would be located in road rights-of-way,

with the remainder located in private easements. In addition, to provide additional natural gas delivery to the Wahpeton community, MDU would construct approximately 1.5 miles of new 10-inch-diameter pipeline from the new MDU-Wahpeton Border Station to its existing distribution system. MDU expects to start and complete construction of these facilities in 2024.

Non-jurisdictional facilities are discussed further as part of the cumulative impacts analysis in section 4.11.

1.5 PERMITS, APPROVALS, AND REGULATORY REVIEWS

FERC has exclusive authority for siting interstate natural gas pipeline projects; however, other agencies also have responsibilities for other federal authorizations, such as the Clean Air Act (CAA), the Clean Water Act (CWA), and section 10 of the Rivers and Harbors Act of 1899. As a federal agency, FERC is required to comply with a number of regulatory statutes including, but not limited to NEPA, section 7 of the ESA, and section 106 of the NHPA. Each of these statutes has been taken into account in the preparation of this draft EIS. The major permits, approvals, and consultations for the Project are identified in table 1.5-1.

Section 7 of the ESA states that any project authorized, funded, or conducted by any federal agency should not "…jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined…to be critical…" (16 USC 1536[a][2][1988]). FERC is required to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitat occur in the vicinity of the proposed Project and conduct consultations with the FWS and/or National Marine Fisheries Service, if necessary. Section 4.4.4 provides information on the status of this review.

The Migratory Bird Treaty Act of 1918 (MBTA) implements various treaties and conventions between the United States, Mexico, Canada, Japan, and Russia for the protection of migratory birds. Birds protected under the MBTA include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (e.g., feathers, plumes), nests, and eggs. The act makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not, without a permit. The MBTA is discussed further in section 4.4.3.

The Bald and Golden Eagle Protection Act of 1940, as amended (BGEPA), prohibits taking without a permit or taking with wanton disregard for the consequences of any bald or golden eagle or their body parts, nests, chicks, or eggs, which includes collection, molestation, disturbance, or killing. The Bald and Golden Eagle Protection Act (BGEPA) protections include provisions not included in the MBTA, such as the protection of unoccupied nests and a prohibition on disturbing eagles. We discuss compliance with the BGEPA in section 4.4.3.

Section 106 of the NHPA requires that FERC take into account the effects of its undertakings on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), including prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance, and to afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking. WBI Energy, as a non-federal party, is assisting FERC in meeting our obligations under section 106 by preparing the necessary information, analyses, and recommendations under Advisory Council regulations in 36 CFR 800. EIS section 4.6 provides information on the status of this review.

WBI Energy must comply with sections 401, 402, and 404 of the CWA. Water quality certification (section 401) has been delegated to the state agencies, with review by the EPA. Water used for hydrostatic

testing that is point-source discharged into waterbodies would require a National Pollutant Discharge Elimination System permit (section 402) issued by the NDDEQ Division of Water Quality. The U.S. Army Corps of Engineers (USACE) has responsibility for determining compliance with all regulatory requirements associated with section 404 of the CWA. The EPA also independently reviews section 404 applications for wetland dredge-and-fill applications for the USACE and has section 404(c) veto power for wetland permits issued by the USACE. The section 404 permitting process regulates the discharge of dredged and fill material associated with the construction of pipelines across streams and in wetlands. Our analysis of water resources and wetland impacts is provided in sections 4.3.2 and 4.3.3, respectively.

The CAA was enacted by Congress to protect the health and welfare of the public from the adverse effects of air pollution. The CAA is the basic federal statute governing air pollution. Federal and state air quality regulations established as a result of the CAA include, but are not limited to, Title V operating permit requirements and Prevention of Significant Deterioration (PSD) Review. The EPA is the federal agency responsible for regulating stationary sources of air pollutant emissions; however, the federal permitting process has been delegated to the NDDEQ Division of Air Quality. Air quality impacts that could occur as a result of construction and operation of the Project are evaluated in EIS section 4.8.

Table 1.5-1 lists the major permits, consultations, and approvals for the Project. WBI Energy is responsible for obtaining all permits and approvals required to implement the Project, regardless of whether they appear in the table.

TABLE 1.5-1

Permits, Approvals, and Consultations for the Wahpeton Expansion Project

Regulatory Agency	Permit, Approval, Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity pursuant to section 7 of the NGA and 18 CFR 157	Request to use the Pre-Filing Process submitted September 22, 2021. Pre-filing request approved September 27, 2021. Application for a Certificate of Public Convenience and Necessity filed May 27, 2022 - pending.
U.S. Army Corps of Engineers—Omaha District	CWA section 404 (Waters of the U.S.); Jurisdictional Determination	Submitted May 31, 2022. Approval anticipated November 2022.
U.S. Fish and Wildlife Service	Informal section 7 ESA Consultation MBTA Coordination BGEPA Coordination	Submitted May 27, 2022. Approval received June 29, 2022.
United States Department of Agriculture, Natural Resources Conservation Service—North Dakota	Erosion and Sediment Control Consultation Seed mix consultation Agricultural Conservation Easement Program consultation	Submitted January 2022. Approval received February 2022.
Federal Aviation Agency	Hazard Determination for MDU-Kindred Station	Revised Application submitted May 23, 2022. Approval received August 8, 2022.
State (North Dakota)		
North Dakota Department of Environmental Quality, Division of Water Quality	General Permit for Construction Stormwater Discharge under the National Pollutant Discharge Elimination System	Anticipated submittal February 2024. Anticipated approval April 2024. Anticipated submittal February 2024.

TABLE 1.5-1

Permits, Approvals, and Consultations for the Wahpeton Expansion Project

Regulatory Agency	Permit, Approval, Consultation	Status
	General Permit for Construction Dewatering and Discharge of Hydrostatic Test Water under the National Pollutant Discharge Elimination System	Anticipated approval April 2024.
	Water Quality Certificate under section 401 of the Clean Water Act (a Water Quality Certificate under section 401 of the Clean Water Act is automatically issued with the use of Nationwide Permit 12)	Submitted May 31, 2022. Anticipated approval prior to May 31, 2023.
North Dakota State Water Commission	Navigable Water Crossing Permit under North Dakota Century Code Chapter 61–33 (Sovereign Lands)	Anticipated submittal October 2023. Anticipated approval February 2024.
	Temporary Water Permit—Water appropriation permit for withdrawals associated with hydrostatic test water and drilling mud	
North Dakota Department of Game and Fish	Consultation for impacts on fisheries and wildlife	Consultation initiated May 2022. Anticipated approval prior to May 31, 2023.
	Approval to use water from designated waters of the state known to be infested with aquatic nuisance species	. Anticipated submittal February 2024. Anticipated approval March 2024.
North Dakota Parks and Recreation Department	Consultation under the North Dakota Natural Heritage Program	Submitted September 2021. Approved January 2022.
State Historical Society of North Dakota	Section 106 Consultation, NHPA	Anticipated submittal August 2022. Anticipated approval December 2022.
North Dakota Department of Transportation	Utility Crossing permits for state highway right-of-way	Anticipated submittal January 2024. Anticipated approval March 2024.
County/Local		
Cass and Richland Counties	County Road, section Line, Building and above ground facilities, and Legal Drain Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
BNSF Railway Company	Railroad Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
Red River Valley and Western Railroad	Railroad Crossing Permits	Anticipated submittal January 2024. Anticipated approval March 2024.
Cass County—Mapleton Township	Floodplain Permit	Anticipated submittal January 2024. Anticipated approval April 2024.
Cass County—Normanna Township	Floodplain Permit	Anticipated submittal January 2024. Anticipated approval April 2024.

2.0 DESCRIPTION OF THE PROPOSED ACTION

The Project would include construction of the following facilities in Cass and Richland Counites, North Dakota:

- a 60.5-mile-long, 12-inch-diameter natural gas pipeline;
- minor modifications at WBI Energy's existing Mapleton Compressor Station;
- a new MDU-Wahpeton Border Station;
- a new MDU-Kindred Border Station;
- seven block valves;
- four pig launcher/receivers; and
- ancillary facilities.

Table 2.2-1 lists the border stations, block valves, and pig launchers and receivers associated with the Project.

This section describes the proposed pipeline system facilities, land requirements, construction procedures, schedule, environmental compliance and inspection monitoring, operation and maintenance procedures, and safety controls for the Project. Figure 1-1 shows the locations of WBI Energy's Project. Detailed maps of the pipeline facilities are in appendix C.

Additionally, 80 temporary access roads, 7 permanent access roads, and 5 contractor yards are proposed for use during construction of the Project.

2.1 LAND REQUIREMENTS

Construction of the Project would disturb about 791.5 acres of land. The total acreage required for operation of all Project facilities is 372.5 acres. Land requirements for construction and operation of the Project are summarized in table 2.2-1, and typical right-of-way construction and aboveground facility diagrams are included in appendix D. See section 4.5 for more detailed information regarding land uses affected by the Project.

TABLE 2.2-1

Wahpeton Expansion Project Summary of Land Requirements [a]

Facility	County	Land Affected During Construction (acres)	New Land Affected During Operation (acres)
Pipeline Right-of-Way [b]			
Project Pipeline (Milepost [MP] 0 – 60.5)	Cass (MP 0 – 23.4), Richland (MP 23.4 – 60.5)	544.8	365.7
ATWS [c]	Cass, Richland	113.0	0.0
Subtotal		**657.8**	**365.7**

TABLE 2.2-1

Wahpeton Expansion Project Summary of Land Requirements [a]

Facility	County	Land Affected During Construction (acres)	New Land Affected During Operation (acres)
Contractor Yards			
Kost Yard	Cass	34.2	0.0
Kindred Yard	Cass	4.1	0.0
Comstock South Yard	Richland	4.7	0.0
Comstock North Yard	Richland	21.0	0.0
Wahpeton City Yard	Richland	28.5	0.0
Subtotal		**92.5**	**0.0**
Access Roads			
Temporary access roads	Cass/Richland	24.4	0.0
Permanent access roads	Cass/Richland	3.2	3.2
Subtotal		**27.6**	**3.2**
Aboveground Facilities			
Mapleton Compressor Station (MP 0.0)	Cass	2.9	0
MDU—Kindred Border Station (MP 23.4) [d]	Cass	4.1	1.7
MDU—Wahpeton Border Station (MP 60.5)[d]	Richland	4.0	1.7
Block Valve 1 (MP 0.0)[e]	Cass	0.0	0.0
Block Valve 2 (MP 11.6)	Cass	0.7	0.1
Block Valve 3 (MP 23.4)[e]	Cass	0.0	0.0
Block Valve 4 (MP 31.3)	Richland	0.5	<0.1
Block Valve 5 (MP 39.5)	Richland	1.0	0.1
Block Valve 6 (MP 48.9)	Richland	0.4	<0.1
Block Valve 7 (MP 60.5)[e]	Richland	0.0	0.0
Pig launchers/receivers[f]	Cass/Richland	0.0	0.0
Cathodic Protection Facilities	Cass/Richland	0.0	0.0
Subtotal		**13.6**	**3.6**
PROJECT TOTAL		**791.5**	**372.5**

TABLE 2.2-1

Wahpeton Expansion Project Summary of Land Requirements [a]

Facility	County	Land Affected During Construction (acres)	New Land Affected During Operation (acres)

[a] The numbers in this table have been rounded for presentation purposes and may not reflect the sum of the addends.
[b] Based on a 75-foot-wide construction right-of-way for the 12-inch-diameter pipeline and a 50-foot-wide permanent right-of-way. Includes the cathodic protection facilities (the locations of which have not yet been determined), which would be expected to be installed within the currently proposed workspace for the pipeline and aboveground facilities.
[c] Includes additional temporary workspace (ATWS) associated with pipeline.
[d] The acreage for these aboveground facilities excludes the temporary and permanent pipeline right-of-way within the temporary construction footprint of the facility. This acreage is attributed under the acreage for the pipeline.
[e] Block Valve 1 would be constructed and operated within the Mapleton Compressor Station fence line. Block Valves 3 and 7 would be constructed and operated within the construction and operational footprints of the MDU—Kindred Border Station and the MDU—Wahpeton Border Station, respectively. Land requirements for Block Valves 1, 3, and 7 are thus accounted for in the land requirements for the compressor station modification and MDU border stations.
[f] The four pig launcher/receiver settings would be collocated with Block Valves 1, 2, 5, and 7; therefore, land requirements for the pig launchers/receivers are accounted for in the land requirements for the four block valve sites or other aboveground facilities (i.e., the compressor station modifications and the MDU—Wahpeton Border Station).

Pipeline Facilities

The land disturbed by construction of the Project pipeline facilities would include the temporary construction right-of-way, permanent right-of-way, additional temporary workspace (ATWS, appendix E), contractor yards (see table 2.2-1 above), and temporary and permanent access roads (appendix F). Aerial photograph-based alignment sheets for the proposed Project components can be viewed in eLibrary at accession number 20220726-5028, updated appendix 1B.

WBI Energy would collocate approximately 51 percent (31 miles) of its pipeline route with existing corridors or boundaries such as roads (22.9 miles), utilities such as electric transmission lines (2.1 miles), and railroads (6.0 miles) (table 2.2-2). However, the proposed Project would not overlap with other existing rights-of-way to avoid potential conflicts with these other uses/utilities.

TABLE 2.2-2

Wahpeton Expansion Project Summary of Collocated Facilities

Collocated Utility Owner	Utility Type	Begin Milepost	End Milepost	Direction to Existing Utility/Road Right-of-Way	Paralleled Length (miles) [a]
Road	Road	3.6	4.4	North, West	0.8
Road	Road	6.4	9.3	East, West	2.8
Road	Road	10.6	14.4	West, East	3.8
Road	Road	14.7	18.8	East	4.1
Road	Road	18.8	19.7	East	1.0
Road	Road	19.8	21.8	West	2.0
Road	Road	21.8	22.4	North	0.6

TABLE 2.2-2

Wahpeton Expansion Project Summary of Collocated Facilities

Collocated Utility Owner	Utility Type	Begin Milepost	End Milepost	Direction to Existing Utility/Road Right-of-Way	Paralleled Length (miles) [a]
Road	Road	23.3	23.7	North	0.4
Road	Road	24.3	24.5	East	0.1
Unknown, Road	Electric utility, road	25.7	26.8	South	0.1
Unknown, Road	Electric utility, road	25.7	26.6	South	1.0
None	Road	36.6	36.8	Northeast	0.2
Minnkota, Road	Electric utility, road	38.5	39.5	West	1.0
Road	Road	39.5	40.5	South	1.0
Road	Road	40.9	41.0	South	0.1
Red River Valley and Western, Road	Railroad, road	42.4	47.4	East, West	5.0
Red River Valley and Western, Road	Railroad, road	47.3	47.4	Southwest	0.1
Red River Valley and Western, Road	Railroad, road	47.4	48.4	South	0.9
Road	Road	48.4	48.9	East	0.5
Road	Road	53.9	56.4	East	2.5
Road	Road	57.5	59.6	North	2.2
Road	Road	59.6	60.6	East, West	0.9
PROJECT TOTAL					**31.0**

[a] The totals may not match the sum of addends due to rounding.

WBI Energy would use a 75-foot-wide construction right-of-way Project-wide. Varying widths and sizes of ATWS would be required adjacent to the temporary workspace in certain locations for specialized construction methods, such as the guided bore method, wetland and waterbody crossings, and road crossings. Following construction, WBI Energy would retain a 50-foot-wide permanent (operational) right-of-way along the pipeline. The permanent right-of-way for pipeline facilities would require 365.7 acres of land.

Access Roads

Temporary access roads would be needed to access the construction right-of-way and ATWS. The proposed access roads generally originate at existing public roads and extend to Project facilities. A total of 80 temporary access roads would be used during construction and would be restored to preconstruction conditions to the extent practicable. Seven permanent access roads would be constructed to access the

aboveground pipeline facilities during operation of the facilities. Permanent access roads would require 3.2 acres of land.

Aboveground Facilities

WBI Energy would install pipe connections and equipment (e.g., regulator, meter, piping, and valves) at the existing Mapleton Compressor Station. No additional compression facilities would be added. All proposed equipment and piping would be constructed utilizing 2.9 acres within the existing Mapleton Compressor Station parcel. No new permanent easement would be required for operation.

Border stations, also sometimes referred to as meter and regulation stations, measure the volume of gas removed from or added to a pipeline system at receipt and delivery interconnects. Most border stations consist of a small, graveled area with small building(s) that enclose the measurement equipment. WBI would require approximately 8.1 acres total to install the MDU-Kindred Border Station and the MDU-Wahpeton Border Station. After construction, approximately 3.4 acres, outside of the existing permanent easement, would be maintained as part of the two border stations.

Block valves consist of a small system of aboveground and underground piping and valves that control the flow of gas within the pipeline and can also be used to vacate, or blow-off, the gas within a pipeline segment, if necessary. Most block valves would be installed within the operational pipeline right-of-way or within the footprint of other existing or proposed aboveground facilities. Block valves are typically installed at interconnections within a transmission system and at locations based on the U.S. Department of Transportation (DOT) Class designation of the pipeline; in general, the distance between block valves is reduced in areas of higher human population (see section 4.10). Seven block valves would be installed requiring an aggregate total of 2.6 acres of land for construction. As the majority of land for operation of the block valves would be within the permanent easement for the pipeline, less than 0.4 acre would be required for operation outside of the proposed 50-foot permanent easement width.

Pig launchers and receivers are facilities where internal pipeline cleaning and inspection tools, referred to as "pigs," could be inserted or retrieved from the pipeline. Pig launchers/receivers generally consist of a segment of aboveground piping, 20 to 30 feet in length, which ties into the mainline pipeline facilities below the ground surface. All six pig launchers and receivers would be installed within the 50-foot-wide operational pipeline right-of-way, or within the compressor station, border station facilities, or block valve sites, and the acreage of impact are included with those facilities.

Construction of the aboveground facilities would affect about 13.6 acres of land during construction and 3.6 acres during operation of the facilities as summarized in table 2.1-1 above.

Contractor Yards

WBI Energy is proposing to use five contractor yards. These would temporarily impact 92.5 acres, and WBI Energy would restore the entire area of each contractor yard after completion of construction. Appendix C includes the locations of the contractor yards.

Cathodic Protection

WBI Energy would install cathodic protection systems along the proposed pipeline at various locations to inhibit corrosion. The system would have a low-voltage current attached to the underground pipeline. Test leads would be located aboveground directly over the pipe centerline. Cathodic protection facility connections would be located at the Mapleton Compressor Station and the MDU-Kindred Border Station, and all associated components would be contained within aboveground facilities or the permanent right-of-way.

Farm Taps

According to WBI Energy and its local outreach efforts, the Project could include the installation of farm taps based on requests from landowners along the pipeline route. However, no specific plans or locations for farm taps have been identified. Farm taps, if developed, would be located within the permanent right-of-way, most likely in upland areas. The EPA commented that farm taps could result in impacts on resources such as waterbodies or result in air emissions. As there are no current plans to install farm taps (no farm taps have been identified), consideration of potential impacts would be speculative. However, impacts resulting from installation of farm taps, should they be developed, would likely be similar to those as described for block valves in section 4, and as mentioned above, would likely be contained to the permanent easement. Fugitive air emissions would be possible, although the installation of farm taps would not increase the amount of gas proposed to flow through the system, and these emissions would likely be accounted for within the estimates of the Project's overall fugitive emissions. Any local delivery pipelines and associated equipment extending from the farm taps to the farm owner would be non-jurisdictional to FERC and therefore out of scope of the EIS. However, we have included a general discussion in cumulative impacts (section 4.11) associated with the potential installation of these lines.

2.2 CONSTRUCTION SCHEDULE

WBI Energy proposes to begin construction of some facilities in the 3rd quarter of 2023. WBI Energy proposes to begin full construction of the project in April 2024, with initial restoration being completed by October 2024. WBI Energy anticipates commencing service in November 2024. WBI has indicated that construction is not planned to take place during winter conditions. However, if construction is necessary in winter months WBI Energy would abide by section V.A.1 of the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* and file a winter construction plan with FERC for review and approval at that time. Temporary erosion control measures would remain in place, as needed, until revegetation is successful.

Construction would be carried out by one or two construction spreads consisting of up to approximately 225 construction workers, including approximately 15 workers at each aboveground facility for approximately seven weeks. Construction crews typically would work 12 hours per day, 6 days per week. WBI Energy indicated that construction would generally take place Monday through Saturday, from 7 a.m. to 7 p.m. However, WBI Energy stated that certain activities such as guided bores, hydrostatic testing, tie-ins, trench dewatering, completing in-progress construction activities at wetlands or waterbodies, incident and emergency response, and aboveground facility commissioning may require activity 24 hours a day and to occur on Sundays and/or federal holidays. WBI Energy stated that one new permanent staffing position would be needed for operations and maintenance of the proposed facilities.

2.3 CONSTRUCTION PROCEDURES

The Project would be designed, constructed, operated, and maintained in accordance with the DOT regulations in 49 CFR 192 (2017), FERC regulations in 18 CFR 380.15 (Siting and Maintenance Requirements), and other applicable federal and state regulations. During all phases of the Project, applicable Occupational Safety and Health Administration (OSHA) requirements would be followed (OSHA, 2020). The requirements set forth in applicable regulations and the conditions of the Certificate and other required permits would be provided to WBI Energy's employees and contractors engaged in the construction, maintenance, and operation of the Project and would also be provided to WBI Energy's construction contractors and inspectors. These employees and contractors have been, or would be, instructed to follow these requirements, as applicable, when planning, installing, and operating the facilities. In accordance with 49 CFR 192, the pipeline would be inspected for leakage as part of scheduled operations and maintenance. WBI Energy also would participate in the local One Call system. These standards are in accordance with the National Pipeline Safety Act of 1968, as amended.

WBI would follow the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* without any proposed modifications, and the FERC's *Wetland and Waterbody Construction and Mitigation Procedures*,[8] with some proposed modifications as discussed in detail in section 4.3.3 (see also appendix I). For ease of reference, this EIS refers to both documents as WBI Energy's Plan and Procedures, or simply "the Plan" or "the Procedures."

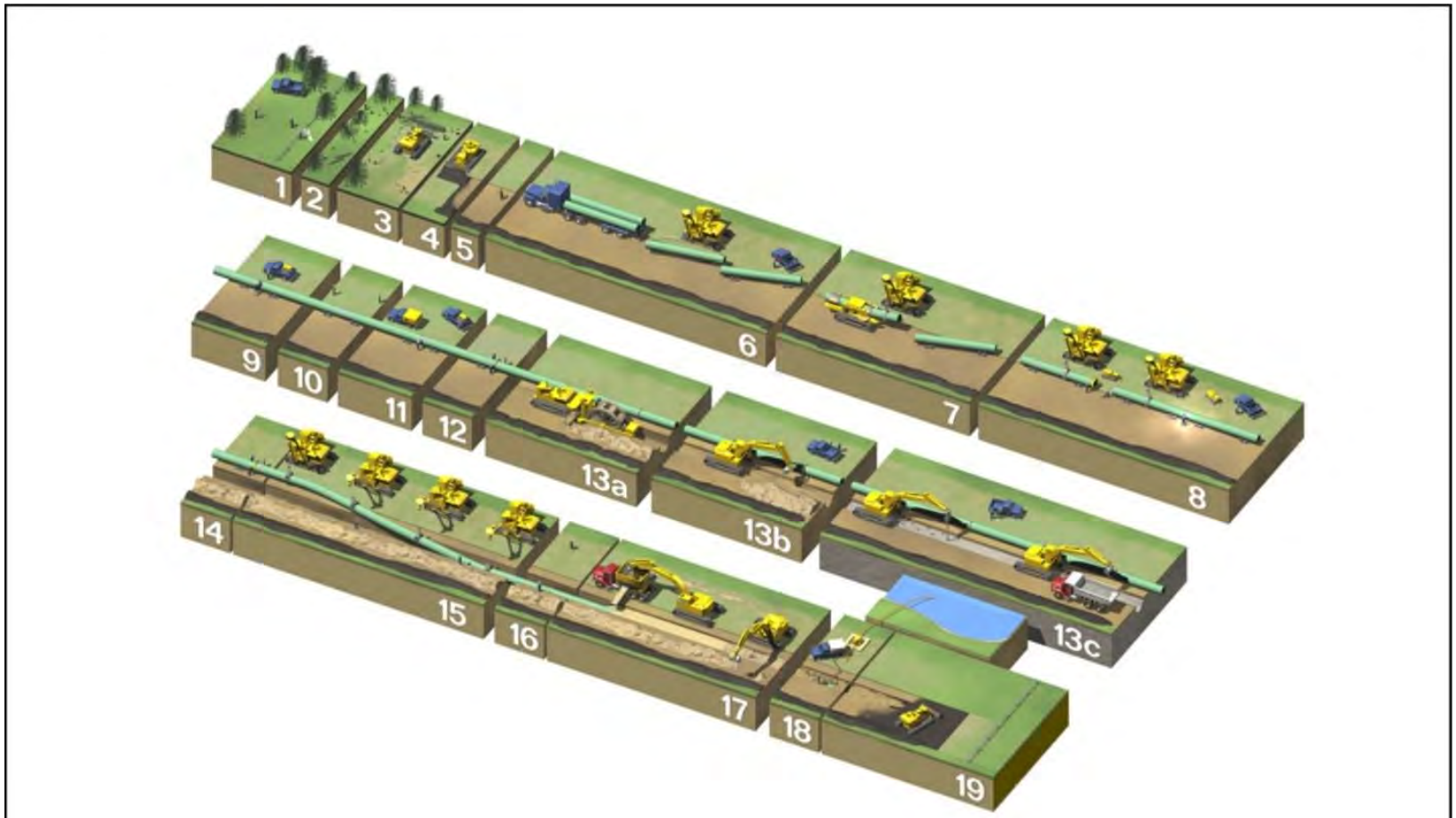
WBI Energy would also implement the following construction and mitigation plans for the Project, which we have reviewed and find acceptable:

- *Spill Prevention, Control and Countermeasures Plan* (SPCC Plan) (see eLibrary accession number 20220527-5343 appendix 1F-1);
- *Fugitive Dust Control Plan* (see eLibrary accession number 20220527-5343 appendix 9A);
- *Guided Bore Drilling Fluid Monitoring and Operations Plan* (Guided Bore Plan) (see eLibrary accession number 20220527-5343 appendix 1F-2);
- *Unanticipated Discovery of Contaminated Environmental Media* (see eLibrary accession number 20220726-5028 updated appendix 2A);
- *Aquatic Nuisance Species Prevention Plan* (see eLibrary accession number 20220726-5028 updated appendix 3B);
- *Noxious Weed Management Plan* (see eLibrary accession number 20220527-5343 appendix 3C);
- *Plan for Unanticipated Discovery of Paleontological Resources During Construction* (see eLibrary accession number 20220527-5343 appendix 6A);
- *Unanticipated Discovery Plan for Cultural Resources and Human Remains* (see eLibrary accession number 20220527-5343 appendix 4G); and
- *Blasting Plan* (see eLibrary accession number 20220527-5343 appendix 6B).

WBI Energy would employ at least one environmental inspector (EI) for each construction spread. WBI Energy would conduct training for its own staff as well as contractors before and during construction of the Project. The training would focus on Project permit requirements; individual Project plan requirements, such as those listed in the construction and mitigation plans for the Project; WBI Energy's Plan and Procedures; and the conditions of the FERC Certificate.

The training of company and contractor staff would include details on the EIs' stop work authority and the environmental mitigation measures appropriate to their jobs. The EIs would report directly to the WBI Energy Environmental Manager and would have peer status with other inspector staff on the Project. The EIs' duties would be consistent with those contained in section II.B of the Plan (Responsibilities of the EI), which include ensuring compliance with environmental conditions identified within the FERC Certificate, WBI Energy's environmental designs and specifications, and environmental conditions identified within other permits or authorizations. An appropriate number of copies of the construction drawing package would be distributed to WBI Energy's inspectors and to contractor supervisory personnel.

[8] The Plan and Procedures are a set of construction and mitigation measures that were developed to minimize the potential environmental impacts of the construction of pipeline projects in general. The Plan can be viewed on FERC's website at http://www.ferc.gov/industries/gas/enviro/plan.pdf. The Procedures can be viewed on FERC's website at https://www.ferc.gov/sites/default/files/2020-04/wetland-waterbody-construction-mitigation-procedures.pdf.



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1. Survey and Staking
2. Clearing
3. Front-End Grading
4. ROW Topsoil Stripping
5. Restaking Centerline of Trench
6. Stringing Pipe
7. Field Bending Pipe
8. Line-Up, Initial Weld
9. Fill & Cap, Final Weld
10. As-Built Footage
11. X-Ray Inspection, Weld Repair
12. Coating Field Welds
13a. Trenching (wheel ditcher)
13b. Trenching (backhoe)
13c. Trenching (rock)
14. Inspection & Repair of Coating
15. Lowering Pipe into Trench
16. As-Built Survey
17. Pad, Backfill, Rough Grade
18. Hydrostatic Testing, Final Tie-in
19. Replace Topsoil, Final Clean-Up, Full Restoration

Figure 2-1
Typical Pipeline Construction Sequence
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

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2.3.1 Conventional Pipeline Construction Sequence

Construction of the pipeline would incorporate conventional construction techniques and standard sequences of activities. This typically consists of a sequential process of surveying/staking, clearing, grading, excavating/trenching, pipe stringing and bending, welding, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration. Crews working on each stage of construction generally proceed along the pipeline right-of-way in one continuous operation. Figure 2-1 shows the typical pipeline construction sequence for installation of a new pipeline. The construction process would be planned to minimize the disturbance time on any given tract of land, subsequently minimizing exposure to potential erosion and the time that the land is temporarily taken out of normal use.

2.3.1.1 Survey and Staking

Following notification of landowners, WBI Energy would commence survey and staking of the centerline, workspaces, resources such as waterbodies and wetlands, access roads, and other special areas.

2.3.1.2 Clearing and Grading

Prior to ground-disturbing activities such as clearing and grading, WBI Energy would contact the North Dakota One-Call notification system to allow utility companies with facilities in the Project area to locate and mark utility lines to prevent accidental damage during pipeline construction. The location of known drain tiles would also be marked by WBI Energy as indicated by landowners or otherwise identified.

WBI Energy would clear the construction right-of-way of vegetation, and grade as needed to provide a safe and efficient workspace for construction equipment. Trees, brush, and logs may be chipped, mulched, and spread onsite or set aside for beneficial reuse by the landowner, or hauled off for disposal at an approved commercial location. WBI Energy does not anticipate the need for burning of vegetation, but indicated that it would do so if conditions require. Rocks may be hauled off for disposal at an approved location or set aside for beneficial reuse per landowner request. All debris would be disposed of in accordance with WBI Energy's Plan, applicable regulations, and landowner requests. Sensitive environmental areas, including wetlands and waterbodies, would not be used to stockpile timber, rock, mulch, or vegetation debris.

The construction right-of-way boundaries would be the limits of the temporary workspace and ATWS as shown on the alignment sheets and would be clearly staked or flagged. No disturbance would be allowed beyond the construction right-of-way limits without prior FERC authorization. WBI Energy would segregate topsoil in accordance with the Plan and Procedures. Topsoil would be removed to a maximum depth of 12 inches or the actual depth of the existing topsoil horizon. In compliance with the Plan, conserved topsoil would be stockpiled along one side of the construction right-of-way, allowing the other side to be used for access, material transport, and pipe assembly. WBI Energy would stabilize and protect the topsoil stockpiles in accordance with the Plan (section IV.B.6). Specifically, sediment barriers, mulch, or functional equivalents, where necessary, would be employed to stabilize, protect, and ensure segregation of the topsoil stockpiles. Construction equipment would not be permitted to travel over the topsoil piles.

Following grading, WBI Energy would install soil erosion and sedimentation control measures along the construction right-of-way, access roads, and ATWS in accordance with the Plan and Procedures.

2.3.1.3 Pipe Stringing, Bending, Welding, and Coating

Sections of pipe, typically between 40 and 80 feet long (also referred to as "joints"), would be transported to the right-of-way by truck and strung beside the trench in a continuous line. The pipe would

be delivered to the job site with a protective coating of fusion-bonded epoxy or other approved coating that would inhibit corrosion by preventing moisture from coming into direct contact with the steel.

Individual sections of pipe would be bent to conform to the contours of the ground after the joints are strung alongside the trench. Workers would use a track-mounted, hydraulic pipe-bending machine to bend the pipe. Where multiple or complex bends are required, bending would be conducted at the pipe fabrication factory, and the pipe would be shipped to Project areas pre-bent.

After the pipe joints are bent, they would be aligned, welded together into a long segment, and placed on temporary supports at the edge of the trench. WBI Energy would use welders who are qualified according to applicable standards in 49 CFR 192 Subpart E, American Petroleum Standard 1104, and other requirements.

Once the welds are made, a coating crew would coat the area around the weld before the pipeline is lowered into the trench. Prior to application, the coating crew would thoroughly clean the bare pipe areas with a power wire brush or sandblast machine to remove dirt, mill scale, and debris. The crew would then apply the coating and allow the coating to dry. The pipeline would be inspected visually and non-destructively for faults or voids in the coating and would be visually inspected for scratches and other defects. WBI Energy would repair any damage to the coating that may have occurred before the pipeline is lowered into the trench.

2.3.1.4 Trenching and Depth of Cover

Soil would be removed to create a trench into which the pipeline would be placed. A rotary trenching machine, track-mounted excavator, or similar equipment would be used to excavate the pipeline trench. Blasting is not anticipated to be required for the Project. However, should blasting become necessary, WBI Energy would comply with its *Blasting Plan* that was submitted in support of the application.

The trench would be excavated to a depth that would provide sufficient cover over the pipeline in accordance with DOT standards in 49 CFR 192.327. Typically, the trench would be excavated 5 feet deep, depending on the substrate and resource being crossed, to allow for 4 feet of cover over the pipeline. Excavations could be deeper in certain locations, such as at road and stream crossings or where foreign lines are located. Generally, the pipeline would be installed with a minimum of 4 feet of cover at two-track and dirt roads, with increasing depths of cover at other locations such as 6 feet at roadside ditches, 10 feet at non-flowing waterbodies, 15 feet at flowing canals and irrigation ditches, and 25 feet at large waterbodies such as the Maple, Sheyenne, and Wild Rice River crossings. Trench width at the top of the trench may vary depending on environmental conditions.

2.3.1.5 Lowering-In and Backfilling

WBI Energy personnel would inspect the trench for rocks and other debris that could damage the pipe or protective coating before lowering the pipe into the trench. In addition, the trench would be inspected for potentially trapped wildlife, and escape ramps would be provided. Trench dewatering may be necessary to inspect the bottom of the trench in areas where water has accumulated. Trench water discharges would be directed to well-vegetated areas and away from waterbodies to minimize the potential for runoff and sedimentation. The pipeline would then be lowered into the trench by a series of side-boom tractors (tracked vehicles with hoists on one side and counterweights on the other), which would carefully lift the pipeline and place it on the bottom of the trench.

Trench breakers (stacked sandbags or polyurethane foam) would then be installed in the trench on slopes at specified intervals to prevent subsurface water movement along the pipeline. The trench would

then be backfilled using the excavated soil material free from rocks that could damage the pipeline's coating. At locations where topsoil had been separated from subsoil during the clearing process, subsoil would be returned to the trench first, followed by topsoil.

2.3.1.6 Hydrostatic Testing

Hydrostatic testing would be conducted in accordance with 49 CFR 192 to verify the integrity of the pipeline and the piping components of the aboveground facilities before the pipeline is placed into service. The pipe segments would be capped with manifolds, filled with water, pressurized, and held for the duration of a testing period. Any significant loss of pressure would indicate that a leak may have occurred and warrant further inspection and, where necessary, repair. WBI Energy may procure approximately 2,175,000 gallons for the testing. WBI Energy would obtain hydrostatic test water from perennial streams located along the pipeline route or through municipal water sources as described in section 4.3.2. Water may be reused for hydrostatic testing other pipeline segments. Hydrostatic test water would be obtained in compliance with state regulations and existing water rights. Water would be discharged to well-vegetated upland areas, in accordance with the WBI Energy's Plan and Procedures as well as applicable North Dakota state laws.

2.3.1.7 Tie-ins and Commissioning

WBI Energy would commence commissioning to ensure that the pipeline and facilities are working properly. These activities may include cleaning, drying, and inspection of the pipeline, as well as purging to remove air and packing of the line with natural gas.

2.3.1.8 Cleanup and Restoration

Following trenching, pipe lowering, and backfilling, WBI Energy would complete final cleanup in accordance with the Plan and Procedures, landowner requests, and other permit requirements.

Cleanup would include restoring the slope, contour, grade, and drainage of the construction right-of-way as near as practicable to preconstruction conditions. The trench may be crowned to allow for anticipated settlement of the backfill. Additional temporary and permanent erosion and sediment control measures, which may include silt fencing or slope breakers, would be installed at this time and/or be maintained from during construction. Final erosion and sediment control measures would be installed in accordance with the Plan and Procedures.

Workspaces would be reseeded in accordance with individual landowner requirements or land management agency requirements. All construction equipment would be removed following final cleanup activities. Unless otherwise required by the landowner, WBI Energy would restore all disturbed areas as close as practicable to their preconstruction condition. Construction debris, trash, surplus materials, and temporary structures would be removed from the construction right-of-way and disposed of in accordance with applicable federal, state, and local regulations. Pipeline markers would be installed along the pipeline route in accordance with DOT safety requirements.

A cathodic protection system would be installed and maintained along the length of the pipeline. WBI Energy conducted a cathodic protection evaluation to determine the cathodic protection system requirements for the Project. Land requirements for the cathodic protection system are included in section 2.1. WBI Energy would periodically monitor and inspect the cathodic protection system to ensure proper and adequate corrosion protection.

2.3.2 Special Pipeline Construction Procedures

In addition to the standard pipeline construction method discussed above, WBI Energy would implement special construction procedures where warranted by site-specific conditions, as discussed below.

Guided Bore Crossings

The guided bore method is typically used for relatively short crossings typically less than 1,000 feet that are relatively shallow. Additionally, guided bores typically use self-contained mobile equipment with a smaller footprint than horizontal directional drills. WBI Energy proposes to use the guided bore method to install the pipeline at 73 locations crossing beneath 80 features along the pipeline route (appendix G). These features include paved roads, interstate highways, driveways, railroads, tree rows, wetlands, and waterbodies. In some instances, multiple features would be crossed with one guided bore.

The guided bore method is a trenchless construction method that uses a guided bore head to excavate a bore hole under a feature and then pull a prefabricated pipe string through the excavated hole. To complete the guided bore, work areas and pits would first be prepared to accommodate the equipment and boring process. Bore pit excavation and backfill activities would not occur at night. Guide wires would be laid on the ground in a 2- to 3-foot-wide corridor to assist with steering of the cutting head. Small diameter (typically less than 2-inch-diameter at breast height [dbh]) woody vegetation would be selectively cut to clear the pathway. The drilling rig would be placed on the entry side and a pilot hole would be bored followed by the reaming process with increasingly larger drill heads to excavate the bore to the correct diameter. Boring would take place for either 12 or 24 hours per day, for 1 to 15 days, depending on the location. Continuous boring would not be required at railroad crossings.

Throughout this process, a boring fluid, or mud, mixture of water and bentonite clay would be circulated through the bore hole to facilitate boring and installation. Used drilling fluid (including drilling fluid made with water from waters containing aquatic nuisance species) would be disposed of at a landfill or incorporated into subsoil with landowner permission and with care to prevent mixing with topsoil. Additives for the drilling fluid may be used, but WBI Energy has not specified which additive could be utilized. Additives would be non-petrochemical and non-hazardous conforming to American National Standard Institute / National Sanitation Foundation Standard 60.

The boring equipment would contain instrumentation to monitor boring progress and parameters, including fluid flowrate and pressure. Once the desired diameter of the hole is reached, the prefabricated pipe string would be pulled through the bore hole from the exit side toward the entry side. This section of pipe may be hydrostatically tested prior to installation. Limited clearing or trimming of woody vegetation may occur if an adjacent waterbody is used as a source of hydrostatic test water in order to access the water source. WBI Energy stated that it is unlikely that bore pit dewatering would be required, but if necessary pit water would be removed by a vacuum truck and either disposed of at a landfill or incorporated into subsoil with landowner permission and with care to prevent mixing with topsoil. To protect environmentally sensitive areas during the guided bore process, WBI Energy has prepared the Guided Bore Plan. If an inadvertent return occurs during construction of guided bores, the plan includes procedures to address the inadvertent return, such as notifications, containment, and cleanup. In addition, the plan includes contingency measures should a guided bore not be successful.

Road, Railroad, and Trail Crossings

WBI Energy would construct the pipeline across railroads and most paved roads and highways using trenchless methods (appendix H). The pipeline would be installed across these features through the guided bore method discussed above. These crossings would be uncased to avoid the possibility of inadvertent cathodic protection grounding conditions, unless otherwise required by applicable permits. The pipeline would be buried in accordance with permit requirements and would be designed to withstand

anticipated external loading. At railroad crossings, the pipeline would be installed approximately 12 feet below the rail and/or in accordance with railroad crossing permits or approvals. For paved road crossings the pipeline would be installed approximately 6 feet below the bottom of the road ditch. WBI Energy does not anticipate disruption of rail or road traffic during the guided bore pipeline installation.

WBI Energy would cross unpaved roads, two-tracks, trails, driveways and roads in areas with a high-water table via the open-cut method. WBI Energy indicated that it would maintain traffic flow during installation of the pipeline via the open-cut method similar to the convention pipeline construction sequence described above.

WBI Energy does not anticipate 24-hour construction would be required for the guided bore crossings of the railroad and public roads. Although not anticipated, 24-hour construction may become necessary on a case-by case basis if borehole stability issues arise or if the pipe becomes lodged during pullback activities.

WBI Energy would cross the North Country Scenic National Trail via guided bore. WBI Energy would display proper signage and employ safety measures during construction in this area. WBI Energy would coordinate with the U.S. National Park Service (NPS) regarding other construction measures that may be required.

Waterbody Crossings

WBI Energy's pipeline would cross waterbodies using the guided bore crossing method (described above). WBI Energy plans to install the pipeline across all 19 waterbodies via the guided bore crossing method. An additional waterbody would be located within workspace, but would not be crossed. Crossings of waterbodies would be constructed in accordance with the measures specified in WBI Energy's Procedures and construction plans. In the event that a guided bore was to fail, and additional subsequent attempts were unsuccessful, the open-cut method, flume, or dam-and-pump methods could be used as an alternate crossing method. WBI Energy would be required to obtain authorization from the Commission and other applicable agencies in order to change the proposed crossing method for a stream should a guided bore be unsuccessful. WBI Energy would maintain at least 6 feet of cover at roadside ditches, 10 feet of cover at non-flowing waterbodies, 15 feet of cover at small flowing waterbodies such as canals and irrigation ditches, and 25 feet of cover at larger flowing waterbodies such as the Maple, Sheyenne, and Wild Rice River crossings via guided bore.

For the alternative open-cut crossing method, construction would proceed with trenching of the waterbody banks and bed by equipment such as a track hoe while the waterbody is flowing (if flow is present). Following installation of the pipeline, then trench would be backfilled with native material and the banks would be restored to preconstruction conditions, or to a stable angle. This process would be completed within 24 hours for minor (less than 10 feet wide) waterbodies and within 48 hours for intermediate (between 10 to 100 feet wide) waterbodies.

WBI Energy could also complete alternative waterbody crossings implementing the dam-and-pump and flume-crossing methods and practices in section V.B.6 of its Procedures. The dam-and-pump and flume-crossing methods are dry-ditch crossing methods. In the flume-crossing method, water flow is temporarily directed through one or more flume pipes placed over the excavation area. The use of the flume(s) allows trenching and pipeline installation under dry conditions without significant disruption of water flow, while also minimizing downstream turbidity. In the dam-and-pump crossing method, water flow is blocked through the construction of a temporary dam and the water is pumped around the excavated ditch to the downstream side.

WBI Energy inspection personnel would inspect all waterbody crossings during construction to document compliance with design criteria and permit conditions. Further details regarding waterbody

crossing impacts and mitigation, including steps if a guided bore crossing is found to be infeasible, are discussed in section 4.3.2.

Wetland Crossings

Constructing the pipeline would require crossing 40 wetlands. Eighteen of the 40 wetlands would be crossed via the open-cut method and the remaining 22 wetlands would be crossed via guided bore. Two other wetlands would be located within workspaces for the pipeline, but would not be crossed. Ten additional wetlands would be crossed by access roads, one other would be affected by construction of the MDU-Wahpeton Border Station, and two others would be located within contractor yards. The locations of wetlands would be marked prior to construction.

Wetlands crossed via a successful guided bore method (as described above) would require limited (such as for positioning of guide wires or pathways to water) or no removal of vegetation or surface disturbance from construction equipment. WBI Energy would attempt to collocate corridors for guide wires and pathways to water to minimize clearing in riparian areas. WBI Energy conservatively used a corridor up to 75-feet-wide for impact estimates, the actual access corridor would only be large enough to accommodate a large piece of construction equipment, more realistically estimated at 12-feet-wide or less. Foot traffic travel lanes would be used to follow the drill head and monitor for inadvertent releases of drilling fluid. Sediment barriers would be installed between the edges of the construction workspace and the wetland boundaries. If an inadvertent return occurs during construction of guided bores, WBI Energy's Guided Bore Plan includes procedures to address the inadvertent return, such as notifications, containment, and cleanup.

Crossing of wetlands via open-cut methods would be completed in accordance with the measures specified in WBI Energy's Procedures, applicable permit conditions, and construction plans. The upper 12 inches of wetland topsoil (if unsaturated) would be removed from directly over the trench line and stored away from subsoil. Equipment would excavate a trench and the pipeline would be lowered in, followed by backfill and restoration. For wetlands within the temporary construction right-of-way but not crossed by the pipeline, low-ground-weight equipment mats, terra mats, or timber riprap would be used if saturated soils are present at the time of construction to reduce rutting.

During clearing, sediment barriers, such as silt fence and staked straw bales, would be installed and maintained adjacent to wetlands and within ATWS, as necessary, to minimize the potential for sediment runoff. Sediment barriers would be installed across the full width of the construction right-of-way at the base of slopes adjacent to wetland boundaries. Silt fence or straw bales installed across the working side of the right-of-way may be removed during the day when vehicle traffic is present and would be replaced each night. Sediment barriers would also be installed within wetlands along the edge of the right-of-way, where necessary, to minimize the potential for sediment to run off the construction right-of-way and into wetland or other sensitive areas outside the construction work area. If trench dewatering is necessary in wetlands, the trench water would be discharged in stable, vegetated, upland areas or through a filter bag or siltation barrier. No heavily silt-laden water would be allowed to flow into a wetland.

Construction equipment working in wetlands would be limited to that essential for clearing the right-of-way, excavating the trench, installing the pipeline, backfilling the trench, and restoring the right-of-way. The method of pipeline construction used in wetlands would depend largely on the stability of the soils at the time of construction. In areas of saturated soils or standing water, low ground-weight construction equipment and timber riprap, prefabricated equipment mats, or terra mats would be used to reduce rutting and the mixing of topsoil and subsoil.

Before backfilling, WBI Energy would install trench breakers where necessary to prevent the subsurface drainage of water from wetlands. Equipment mats, terra mats, and timber riprap would be

removed from wetlands following backfilling. Further details regarding wetland impacts and mitigation for this Project are discussed in section 4.3.3.

In inundated wetlands, which are not currently anticipated to be encountered, the pull method may be used. The pull method involves trenching in the wetland, floating the pipeline into position, applying weights to sink the pipe into the trench, and then backfilling the trench.

Residential Areas

No residences, buildings, or structures are within 50 feet of the proposed Project, including aboveground facilities, temporary workspace, and ATWS. There are 14 residences within 500 feet of the pipeline, and WBI Energy would work with landowners to identify the exact location of wells or septic systems.

Agricultural Areas

For active agricultural lands, the top 12 inches of topsoil would be stripped and segregated from the trench plus spoil storage area in accordance with the FERC Plan. The subsoil excavated from the trench would be used to backfill the trench after pipeline construction and topsoil would be replaced to the top of the stripped area. WBI Energy would de-compact areas as necessary prior to replacement of topsoil.

WBI Energy anticipates crossing approximately 5.6 miles of agricultural fields that have drain tiles. WBI Energy would coordinate with landowners prior to construction to locate and mark existing drain tiles. Where possible, the pipeline would be installed beneath the drain tiles. During construction WBI Energy would provide temporary repairs if drain tiles are damaged or cut. Following the installation of the pipeline, permanent repairs, to as good or better condition, would be made to damaged tiles by a qualified drain tile specialist or landowner. WBI Energy did not identify any underground irrigation systems along the proposed route.

Livestock fences modified during construction would be repaired to as good or better condition following construction. WBI Energy would coordinate with farmers to relocate livestock or maintain alternative temporary fencing where necessary, including exclusion of livestock from the open trench. Grazing deferments would be established with farmers to allow for revegetation as needed.

Blasting

No blasting is anticipated in association with the Project. However, WBI Energy prepared a *Blasting Plan* for the Project if it is determined during construction that blasting is required to facilitate pipeline installation. We find the *Blasting Plan* to be acceptable.

2.3.3 Aboveground Facilities Construction

Construction of aboveground facilities would include general activities such as clearing and grading, establishment of level grade, construction of permanent access roads, foundation installation, erection of aboveground facilities and buildings, installation of piping equipment, testing of equipment, fencing, and timely cleanup and restoration of the Project areas. Minor modifications at the Mapleton Compressor Station would take place within the existing facility limits. Construction of block valves and pig launchers/receivers would be concurrent with pipeline construction. Construction activity and storage of construction material would be limited to the temporary workspaces and ATWS areas, and waste materials would be disposed of in a manner consistent with state and local regulations. Areas inside of fences would be graveled or maintained as grass.

Prior to placing the Project facilities in-service, all controls and safety equipment and systems, such as, relief valves, gas detection, and other protection equipment would be tested. Pressure testing would be

conducted on piping, in accordance with the requirements of DOT Pipeline Safety Regulations (49 CFR 192), WBI Energy's testing specifications, and applicable permits. Testing would follow all applicable federal requirements. None of the facilities to be modified are known to have asbestos-containing material.

2.4 ENVIRONMENTAL COMPLIANCE

FERC may impose conditions on any Certificate granted for the Project. These conditions could include requirements and mitigation measures identified in this EIS to minimize environmental impacts associated with the Project (see section 5.2). We will recommend to the Commission that these requirements and mitigation measures be included as mandatory conditions to any approving Certificate or Authorization issued for the Project. Once a Project is authorized, FERC staff would monitor compliance by conducting onsite inspections, reviewing post-authorization filings, as well as weekly, monthly, and semi-annual reports depending on the Project phase. Further, WBI Energy would be required to implement the construction procedures and mitigation measures it has proposed in its filings with FERC, unless specifically modified by other Certificate conditions.

Other regulatory agencies also may include terms and conditions or stipulations as part of their permits or approvals. While there would be jurisdictional differences between the FERC's and other agencies' conditions, the environmental inspection program for the Project would address all environmental or construction-related conditions or other permit requirements placed on the Project by all regulatory agencies.

WBI Energy would employ at least one full-time EI per construction spread for the Project. The EIs' responsibilities include ensuring the environmental obligations, conditions, and other requirements of permits and authorizations for the Project is met. The EI or other WBI Energy staff would conduct training of staff for environmental compliance. WBI Energy's EIs would inspect all construction and mitigation activities to ensure environmental compliance. EIs may also oversee cultural resource and/or biological monitors that monitor and evaluate construction impacts on resources as specified in this EIS.

FERC staff would also conduct field inspections during construction. Other federal and state agencies may also conduct oversight of inspection to the extent determined necessary by the individual agency. After construction is completed, FERC staff would continue to conduct oversight inspection and monitoring during operation of the Project to ensure successful restoration.

2.5 POST-APPROVAL VARIANCE PROCESS

The pipeline alignment and work areas identified in this EIS should be sufficient for construction and operation (including maintenance) of the Project. However, minor route realignments and other workspace refinements sometimes continue past the Project planning phase and into the construction phase. These changes could involve minor route realignments, shifting or adding new extra workspaces or staging areas, adding or improving additional access roads, or modifications to construction methods. We have developed a variance procedure for assessing impacts on those areas that have not been evaluated in this EIS and for approving or denying their use following any Certificate issuance. In general, biological and cultural resources surveys were conducted using a survey corridor larger than that necessary to construct the facilities. Where survey approvals were denied, WBI Energy would complete the required surveys following a Certificate issuance. If WBI Energy requests to shift an existing workspace or require a new extra workspace subsequent to issuance of a Certificate, these areas would typically (but not always) be within the previously surveyed area. Such requests would be reviewed using a variance request process.

A variance request for route realignments or extra workspace locations along with a copy of the survey results would be documented and forwarded to FERC in the form of a "variance request" in compliance with recommended condition number 1 or 5 in section 5.2 of this EIS. Typically, no further

resource agency consultation would be required if the requested change is within previously surveyed areas, within authorized rights-of-way, and no new sensitive environmental resources would be affected. The procedures used for assessing impacts on work areas outside the survey corridor and for approving their use are similar to those described above, except that additional surveys, analyses, and resource agency consultations would be performed to assess the extent of any impacts on biological, cultural, and other sensitive resources and to identify any avoidance, minimization, and mitigation measures necessary. All variance requests and their approval status would be documented according to FERC's post-approval oversight program as described above. Any variance activity by WBI Energy and subsequent FERC action would be available on FERC's eLibrary webpage under the docket number for the Project (CP22-466-000).

2.6 OPERATION AND MAINTENANCE PROCEDURES

The Project would be designed, constructed, tested, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192, FERC directives in 18 CFR 380.15, and maintenance requirements in WBI Energy's Plan and Procedures. All Project facilities would be marked and identified in accordance with applicable regulations.

The pipeline would be patrolled by WBI Energy on foot or vehicle on a routine basis, which would provide information on possible leaks, third-party construction activities, erosion, encroachment, and other potential problems that may affect the safety and operation of the pipeline. Cathodic protection facilities installed along the pipeline would be regularly monitored and inspected periodically to ensure proper and adequate corrosion protection. Waterbody crossings would be inspected on an annual basis.

Routine vegetation maintenance along the permanent right-of-way may be conducted periodically, in accordance with the Plan and Procedures. Routine vegetation mowing or clearing over the full width of the permanent right-of-way in uplands would not be conducted more frequently than every three years, with the exception of a 10-foot-wide corridor centered on the pipeline that would be cleared at a frequency necessary to maintain the 10-foot-wide corridor in an herbaceous state to allow for periodic corrosion and leak surveys. WBI Energy stated that unspecified herbicides (along with surfactants and additives) may be used to control weed species along the pipeline corridor or at aboveground facilities. Herbicides, surfactants, and additives would be used by licensed staff according to applicable governmental requirements and permits, manufacturer's and label directions, and with landowner permission. WBI Energy would not conduct any routine vegetation mowing or clearing in wetlands that are located between guided bore or bore entry and exit points. In wetlands, a 10-foot-wide corridor centered on the pipeline would be cleared at a frequency necessary to maintain an herbaceous state and trees 15 feet tall or higher within 15 feet of the pipeline centerline may be cut and removed. Routine vegetation maintenance would take place outside of the April 15 to August 1 migratory bird nesting avoidance window, unless the appropriate field surveys are conducted, and the necessary approvals are obtained.

WBI Energy would also perform regular operation and maintenance activities on equipment at the aboveground facilities associated with the Project. These activities would include but are not limited to, calibration, inspection, and scheduled routine maintenance.

WBI Energy stated that it has no plans to expand its proposed facilities, nor does it have plans for any abandonment of facilities. If WBI Energy proposes future expansions or abandonments, it would file an application with FERC and other applicable agencies.

3.0 ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, system alternatives, route alternatives and variations, and aboveground facility alternatives.

The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. With regard to the first criteria and for the purposes of NEPA, WBI Energy's stated objectives for the Wahpeton Expansions Project are to provide 20,600 equivalent dekatherms per day of firm natural gas transportation to the proposed MDU-Kindred and MDU-Wahpeton Border Stations by November 2024. WBI Energy indicates that the additional natural gas delivery is required to support the growing demand for natural gas in southeastern North Dakota. The Project would provide additional natural gas supply to the Wahpeton community in North Dakota where MDU has existing infrastructure. In addition, the Project would also provide MDU with the ability to provide new natural gas services to the Kindred community in North Dakota. A preferable alternative must meet the stated purpose of the Project, and would need to provide service within a reasonably similar timeframe, which is providing natural gas by November of 2024. It is important to recognize that not all conceivable alternatives can meet the Project's purpose, and an alternative that does not meet the Project's purpose cannot be considered a viable alternative.

Not all conceivable alternatives are technically feasible or practical. Some alternatives may be limited by the extent of existing technologies or by system capacities, while others may not be practical because sites are unavailable or cannot be developed for the proposed use. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render a project economically impractical. Alternatives that would not meet the Project's purpose or were not technically/economically feasible or practical were not brought forward to the next level of review.

Also, it is important to consider the environmental advantages and disadvantages of the proposed action, as some alternatives may reduce impacts on certain resources but increase impacts on others. Generally, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts from the current set of landowners to a new set of landowners.

We considered a range of alternatives in light of the Projects' objectives, feasibility, and environmental consequences. Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear that the alternative was either not reasonable, would result in greater environmental impacts that could not be readily mitigated, offered no significant environmental advantages over the proposed Project, or could not meet the Project's purpose. Alternatives that appeared to result in less than or similar levels of environmental impact were reviewed in greater detail. The following sections discuss and analyze alternatives that warranted further review and provide sufficient detail to explain why they were eliminated from further consideration or are recommended for adoption into the Project.

Our analysis that follows is based on review of area maps, comments and suggestions from regulatory agencies, comments from the public, data provided by WBI Energy in its application, and our independent research. Unless otherwise noted, we used the same sources of information to standardize comparisons between the Projects and corresponding alternatives. Therefore, data presented in our analysis may differ slightly from that presented elsewhere in this EIS, which included desktop analysis, Projects-specific data collected during field surveys, and engineering drawings.

If the Projects are approved, that does not preclude the Projects' sponsors from making route or site adjustments if conditions warrant. For example, minor alignment shifts may be required prior to and during construction to accommodate currently unforeseeable site-specific constraints related to engineering or environmental concerns, or landowner preferences. All such alignment shifts that occur outside of the Certificated right-of-way would be subject to review and approval by FERC, and compliance with conditions of the Commission's Certificate.

The EPA requested consideration of how reasonably foreseeable regional infrastructure alternatives could serve the public's needs, and requested that the EIS include an assessment of a variety of alternatives to the proposed action. To our knowledge, there are no reasonably foreseeable regional infrastructure projects that are planned or proposed by other entities that could meet the Project purpose and need. We did however, identify modifications that could be made to other companies' facilities to possibly meet the project's purpose and need; those are discussed as system alternatives below. Additionally, we received comments recommending non-gas energy alternatives. We discuss these below in our analysis of the no-action alternative.

3.1 NO-ACTION ALTERNATIVE

The Commission has two courses of action in processing applications under section 7 of the NGA: 1) deny the requested actions (the no-action alternative); or 2) grant the Certificate, with or without conditions. If the no-action alternative is selected by the Commission, the environmental impacts associated with the Project and analyzed in this EIS would not occur. WBI Energy would not construct any component of the Project and, consequently, would be unable to meet the stated purpose and need of the Project to provide firm natural gas transportation service for 20,600 equivalent dekatherms per day to southeastern North Dakota. Southeastern North Dakota, however, would still require firm natural gas transportation service to supply natural gas to the communities of Kindred and Wahpeton. Until such time as a natural gas supply is provided, the communities would continue to lack a natural gas supply for commercial, industrial, and residential customers. As such, adopting the no-action alternative would result in the continued lack of a natural gas supply to two communities.

We have prepared this EIS to inform the Commission and stakeholders about the expected impacts that would occur if the Project were constructed and operated. As indicated in this EIS, staff has not identified a significant impact associated with the proposed action. The Commission will ultimately determine the Project need and could choose the no-action alternative.

The EPA recommends that FERC consider and evaluate non-fossil fuel options as alternatives as well as other non-FERC jurisdictional alternatives that could satisfy the need for the Project under the no-action alternative. We note that the Project purpose is to transport natural gas to Wahpeton and Kindred, North Dakota. FERC is tasked with authorizing infrastructure to be used for the transportation of natural gas, not the consumption of natural gas. The consumption of natural gas for activities such as building heating and electricity generation may be the proposed action of the downstream entities; however, alternatives that do not also facilitate the transportation of natural gas cannot be a function surrogate. Therefore, we have not identified any non-gas energy alternatives or other alternatives that would satisfy the need for the Project. The Commission could consider a wider range of energy policies when deciding on this (or any other) project. However, non-natural gas options do not meet the stated purpose of the

Project and are not a reasonable or practicable alternative to the proposed action; as such, they are not considered further in this analysis.

3.2 SYSTEM ALTERNATIVES

System alternatives would use existing, modified, or proposed pipeline systems to meet the purpose and need of the Project. Although modifications or additions to existing or proposed pipeline systems may be required, implementation of a system alternative would deem it unnecessary to construct all or part of the Project; for example, if adding compression on one part of the system could negate the need for new pipeline, or if another operator could construct facilities that would reduce environmental impacts. Such modifications or additions could result in environmental impacts that are less than, similar to, or greater than those associated with construction and operation of the Project. A viable system alternative to the Project would have to provide sufficient pipeline capacity to transport 20,600 equivalent dekatherms per day of firm natural gas transportation capacity to the delivery points specified by the precedent agreements signed by WBI Energy within a timeframe reasonably similar to the proposed Project. Additionally, the system alternative must be technically and economically practical and offer a significant environmental advantage over the proposed Project.

Our analysis of system alternatives includes an examination of existing and proposed natural gas transportation systems that currently serve or eventually would serve the markets targeted by the Project. Additionally, should our analysis find a different system alternative that meets all criteria for us to recommend it, the Commission cannot compel any entity to build facilities; therefore, the Commission would need to decide whether to select the no-action alternative or not.

Viking Gas Transmission Company, Great Plains Natural Gas Company, Northern Border Pipeline Company, and Great Lakes Gas Transmission Company operate existing natural gas pipeline systems in the vicinity of the Project. Based on our review of the available information, these four systems, with the construction of additional facilities as described below, would *appear* to meet the Project objective, and we have no reason to conclude they would not be technically and economically feasible, although we acknowledge that increased pipeline length as discussed below could substantially increase construction costs. Accordingly, we have applied our third criterion (reviewing the alternative with regard to potential environmental advantages). Potential utilization of any of these four systems as theoretical system alternatives to meet the Project's purpose would increase pipeline length by approximately 37 to 109 miles, which would include additional impacts on land area, new landowners, and likely multiple other resources, rendering these systems as having no significant environmental advantage over the proposed action.

The Alliance Pipeline System (Alliance) also operates in the vicinity of the Project. Alliance has no known plans to provide natural gas service to Wahpeton or Kindred. A theoretical Alliance System Alternative would require construction of a new pipeline from Fairmont, North Dakota north to Wahpeton, then on to Kindred (assuming a route between Wahpeton and Kindred similar to the Project with similar impacts) (figure 3.2-1). Relative to the Project, the Alliance System Alternative would be slightly (0.9 mile) longer, 30 percent less collocated with existing rights-of-way, affect 8.7 acres more land area, two more waterbodies, 1.6 acres more forest, and two more nearby residences (table 3.2-1). The Alliance System Alternative would affect 1.7 less wetland acreage than the Project. Further, the existing Alliance pipeline contains natural gas liquids, likely requiring construction of an associated gas processing facility for the Alliance System Alternative. Based on our review of the available information, the Alliance System Alternative would *appear* to meet the Project objective, and we have no reason to conclude it would not be technically and economically feasible, although we acknowledge that development of a gas processing facility as discussed above could substantially increase construction costs and also would add to the environmental footprint of the alternative. Accordingly, we have applied our third criterion (reviewing the alternative with regard to potential environmental advantages).

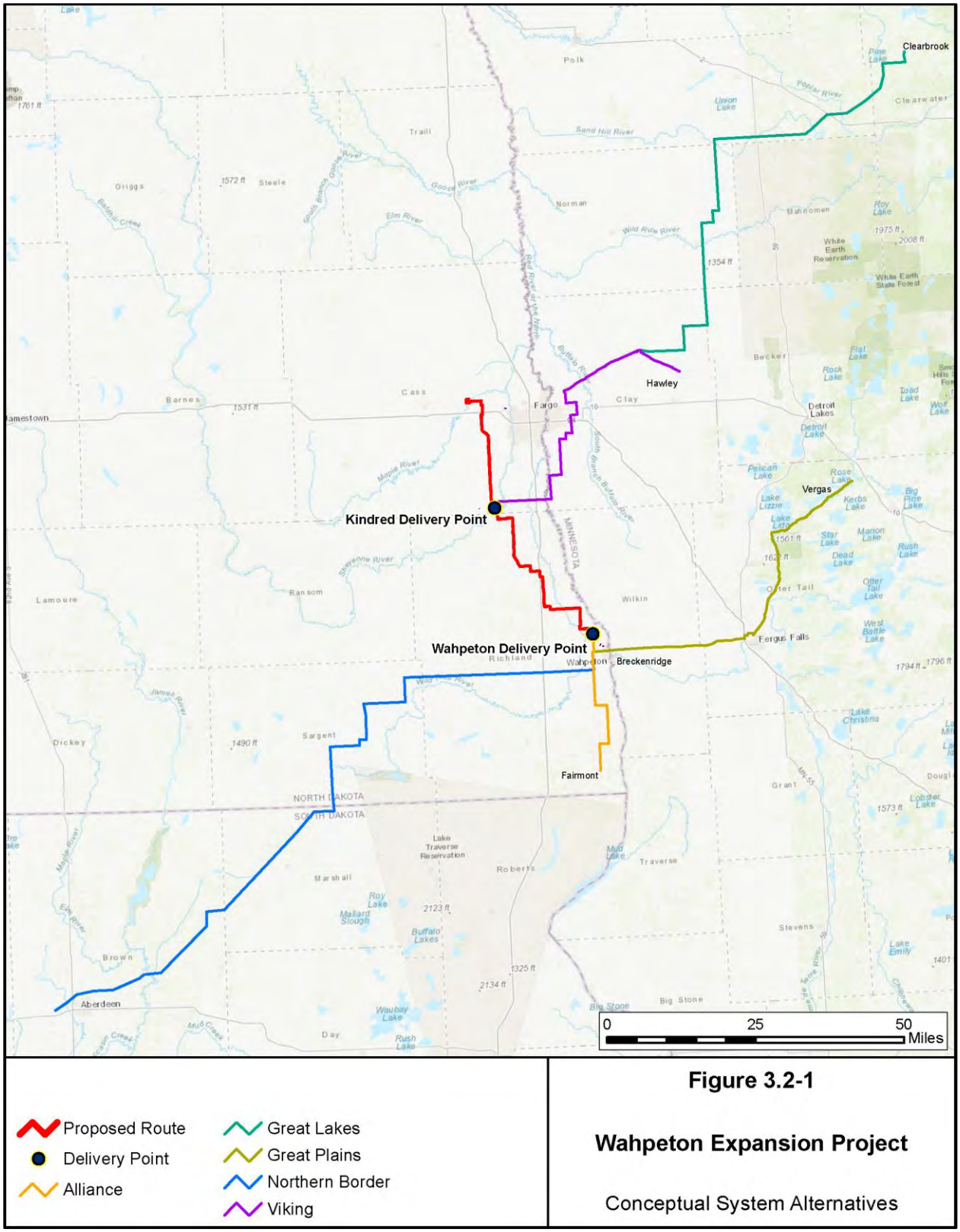

Figure 3.2-1

Wahpeton Expansion Project

Conceptual System Alternatives

TABLE 3.2-1

Comparison of Alliance Pipeline System Alternative to the Corresponding Segments of Proposed Route

Criteria	System Alternative Route	Proposed Route
Alliance Pipeline System Alternative[a]		
Length (miles)	24.2	23.3
Land affected by construction (acres)	219.9	211.2
Land within permanent right-of-way (acres)	146.6	141.4
Length collocated/uncollocated (miles)	8.6/15.6	15.3/8.0
Percent collocated	36	66
National Hydrography Dataset (NHD) waterbody crossings (number)	11	9
Major (>100 feet) waterbody crossings (number)	0	0
National Wetland Inventory (NWI) total wetlands affected (acres)	1.0	2.7
National Wetland Inventory forested and scrub-shrub wetlands affected (ac)	0.16	0.02
Forestland affected (acres)	1.7	0.1
Agricultural land affected (acres)	209.3	207.3
Steep slopes (>15%) crossed (feet)	106	53
Road/railroad crossings (number)	34	38
Residences within 50 feet of the centerline (number)	2	0
Federal/state/municipal land crossed (acres)	0	0
Cultural sites crossed/within 50 feet[b] (number)	unknown[c]	0

Source: U.S. Fish and Wildlife Service, 2016a; U.S. Geological Survey, National Hydrography, and; NDGISHUB-DOT, 2009.

[a] A standard 75-foot-wide corridor for the alternative and proposed route was used to calculate the acreages of any construction impacts; and a 50-foot-wide corridor was used to calculate the acreages of permanent impacts.

[b] Cultural resource sites include previously mapped sites identified by the Class I literature search and sites identified within 50 feet of potential workspace during WBI Energy's Class III field surveys that cannot be determined ineligible for listing on the National Register of Historic Places without further evaluation.

Given the comparative data presented above, we conclude that the Alliance System Alternative does not offer a significant environmental advantage over the proposed action, and we do not recommend it.

3.3 ALTERNATIVE PIPELINE ROUTES

During Project development, WBI Energy incorporated numerous route alternatives and minor route variations into the Project as a result of environmental and engineering investigations, maximizing collocation where feasible, potential issues identified by FERC staff, avoidance of Tribal and public lands, avoidance of sensitive resources including residences, and from landowner and stakeholder outreach efforts. As a result of these routing considerations during early Project design and identified during the Pre-Filing Process, route modifications to avoid or reduce environmental impacts were eventually proposed as part of the Project in WBI Energy's May 27, 2022 Section 7(c) application and as such are included in our analysis as part of the proposed action in section 4 of this EIS. In general, the basis

for these adjustments was intuitive and practical (e.g., relocation to avoid wetland impacts; agency preferences; landowner preferences; and survey findings). As such, these adjustments are not alternatives *per se*, as they have already been considered and adopted, as applicable, into the proposed action, and no issue was raised to prompt us to re-evaluate their inclusion. Examples of routing considerations taken into account during Project development include:

- from MPs 0.0 to 9.3, WBI Energy accommodated landowner and City of Mapleton preferences, avoided a golf course, and avoided routing diagonally across farm fields;
- from MPs 26.6 to 32.4, WBI Energy accommodated landowner preferences following section lines and field edges;
- from MPs 39.5 to 47.3, WBI Energy routed its pipeline to avoid wetland and waterbody impacts; and
- from MPs 44.4 to 53.9, WBI Energy accommodated landowner preferences and avoided four cultural resource sites.

Other examples include locations where the route was refined to address landowner preferences; improve river crossing locations; minimize impacts on farm buildings, utilities, cultural resources, and agricultural lands (including drain tiles); follow section/tract boundaries; provide for future farm tap locations; parallel existing utilities; and address our comments to minimize forested impacts at the crossing of Antelope Creek and the Wild Rice River.

Additionally, we did not receive any comments or specific recommendations regarding alternative pipeline routes during scoping other than a landowner's comment about a possible cultural resources site on his family's property (which was subsequently avoided through the adoption of a route adjustment during WBI Energy's initial routing process). However, our review of resource impacts resulted in identification of one area that we determined merited a more detailed alternatives analysis and review. This route alternative is evaluated below.

3.3.1 Wild Rice River Route Alternative - MP 55

On September 1, 2022, WBI Energy filed supplemental information relevant to the Wild Rice River Route Variation – MP 57. Based on field surveys and analyses completed after the filing of its application, WBI Energy developed a new route alternative called Wild Rice River Route Alternative - MP 55 that would address our previous request to avoid two crossings of the Wild Rice River (figure 3.3-1). The Wild Rice River Route Alternative - MP 55 deviates from the proposed route at MP 55.1 and would cross agricultural land in multiple locations, and parallel 180 Avenue SE before rejoining the proposed route at MP 59.6. The purpose of Wild Rice River Route Alternative - MP 55 is to avoid the two crossings of the Wild Rice River and a newly discovered archaeological site along the proposed route. The eligibility status of the archaeological site has not yet been determined.

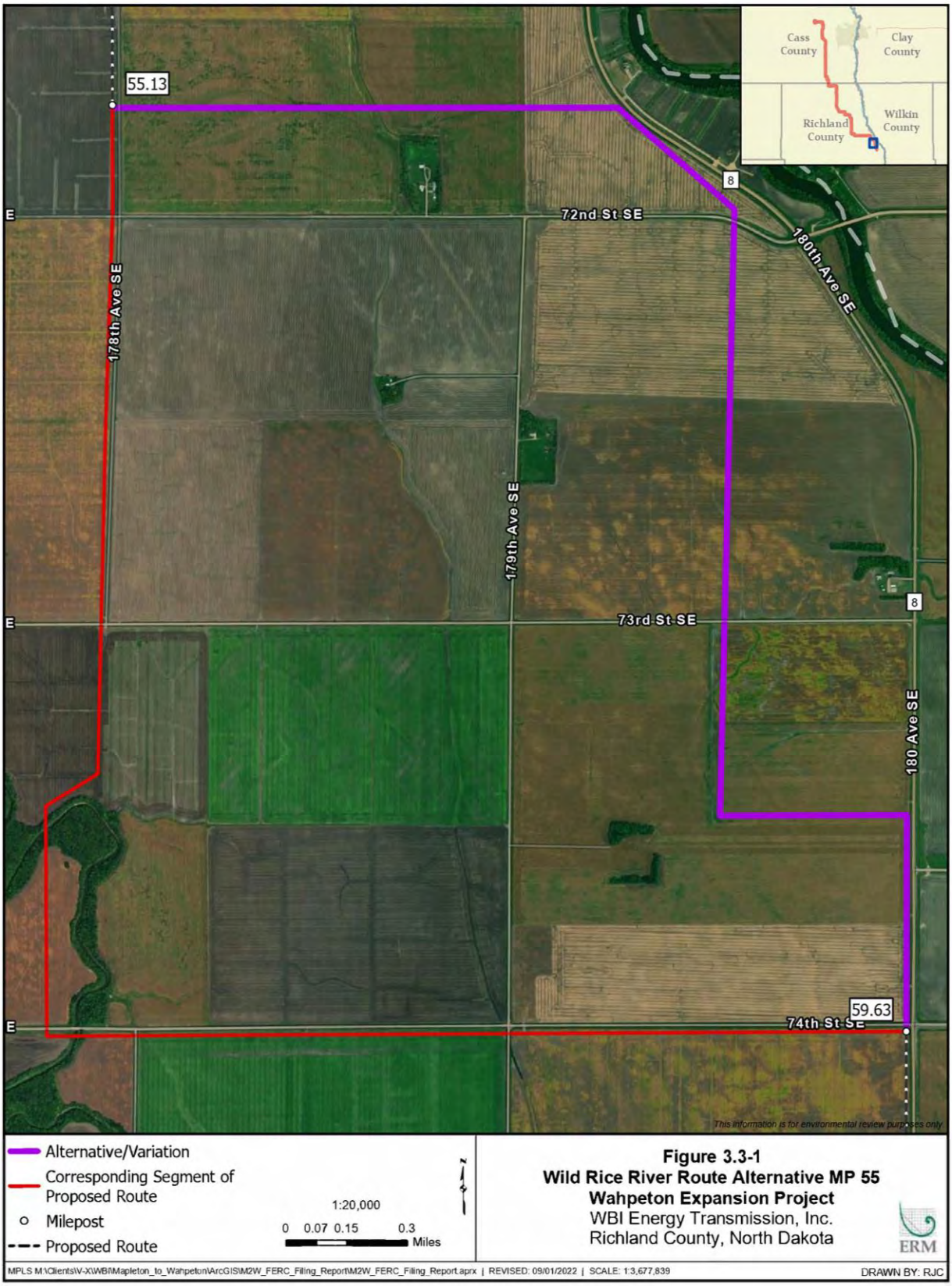

Figure 3.3-1
Wild Rice River Route Alternative MP 55
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Richland County, North Dakota

A comparison of the environmental parameters of the Wild Rice River Route Alternative - MP 55 relative to the proposed route is presented in table 3.3-3. The Wild Rice River Route Alternative - MP 55 would be shorter, reduce the number of waterbodies crossed from four to one (including avoidance of both crossings of the Wild Rice River), reduce impacts on riparian forest, agricultural land, and the number of landowners, and avoid the newly discovered archaeological site. The proposed route would be more collocated with existing linear features such as roads.

WBI Energy has not yet fully completed environmental and engineering analyses, or final route design, nor have agency consultations been initiated, for the Wild Rice River Route Alternative - MP 55. Three newly affected landowners and four previously affected landowners that would now be impacted in a different way, as well as permitting agencies, have not yet been afforded an opportunity to comment on the Wild Rice River Route Alternative - MP 55. WBI Energy reports that it is in discussions with the potentially newly affected landowners, who have been added to our distribution list for this draft EIS. We find that based on the information provided, the Wild Rice River Route Alternative - MP 55 has several environmental advantages over the proposed action, and therefore, **we recommend that:**

- **Prior to the end of the draft EIS comment period, WBI Energy should incorporate the Wild Rice River Route Alternative - MP 55 into the Project route, as depicted in figure 3.3-1 of the draft EIS. WBI Energy should file with the Secretary of the Commission (Secretary) revised alignment sheets and updated land use and resource tables and any applicable updates to Project resource impacts. WBI Energy should also provide documentation that newly affected landowners have been notified in accordance with 18 CFR 157.6(d).**

As mentioned above, because new landowners would be impacted by the Wild Rice River Route Alternative - MP 55, we are seeking input from all interested landowners, agencies, and stakeholders on the above recommendation that WBI Energy adopt this alternative. We encourage all affected landowners to provide us any comments or concerns during the draft EIS comment period.

TABLE 3.3-3

Comparison of Wild Rice River Route Alternative MP 55 to the Corresponding Segment of Proposed Route

Criteria	Wild Rice River Route Alternative MP 55[a]	Proposed Route
Length (miles)	4.12	4.50
Land affected by construction (acres)	37.5	40.9
Land within permanent right-of-way (acres)	25.0	27.3
Length collocated/uncollocated (miles)	0.94/3.18	3.59/0.91
Percent collocated	21	87
NHD waterbody crossings (number)	1	4
Major (>100 feet) waterbody crossings (number)	0	0
NWI wetlands affected (acres)	0.0	0.0
Forestland affected (acres) [b]	0.0	0.4
Agricultural land affected (acres)	35.4	39.7
Steep slopes (>15%) crossed (feet)	0	0
Road/railroad crossings (number)	5/0	5/1 abandoned railroad
Residences within 50 feet of the centerline (number)	0	0

TABLE 3.3-3

Comparison of Wild Rice River Route Alternative MP 55 to the Corresponding Segment of Proposed Route

Criteria	Wild Rice River Route Alternative MP 55[a]	Proposed Route
Federal/state/municipal land crossed (acres)	0.0 [c]	0.0
Parcels/Landowners crossed (number)	12/7	17/8
Cultural sites crossed/within 50 feet[d] (number)	0	1

Source: U.S. Fish and Wildlife Service, 2016a; U.S. Geological Survey, National Hydrography, and; NDGISHUB, 2009; NDGISHUB-DOT, 2018.

[a] A 75-foot-wide corridor was used to calculate the acreage of construction impacts, and a 50-foot-wide corridor was used to calculate the acreages of any permanent impacts. Actual acreage for the proposed route would increase at the guided bore entry and exit locations but decrease between the guided bore entry and exit locations.

[b] Forestland acreage includes forestland located between the guided bore entry and exit locations. Actual impacts on forestland along the proposed route would be less and very limited.

[c] The alternative would cross a narrow strip of Richland County land associated with a county road right-of-way; this is not park land or recreational land.

[d] Cultural resource sites include previously mapped sites identified by the Class I literature search and sites identified lass III field surveys that cannot be determined ineligible for listing on the National Register of Historic Places without further evaluation.

3.4 ABOVEGROUND FACILITY ALTERNATIVES

Based on our analysis in this EIS, we have determined that the proposed sites for the aboveground facilities are in acceptable locations, and that construction would not result in significant environmental impacts. Alternatives were not assessed for the Mapleton Compressor Station modifications because all proposed activities at the site would occur within the existing fenced facility. Additionally, we did not receive any comments on or objections to the proposed sites for aboveground facilities and as such, we did not further investigate site alternatives.

3.5 ALTERNATIVES CONCLUSIONS

We considered alternatives to WBI Energy 's proposal, and conclude that no system, route, or other alternative would provide a significant environmental advantage over the Project as proposed, except for the Wild Rice River Route Alternative - MP 55, which we are recommending be adopted as part of the preferred alternative. Therefore, we conclude that the proposed Project, with our recommended mitigation measures and the adoption of the Wild Rice River Route Alternative - MP 55, is the preferred alternative to meet the Project objectives.

4.0 ENVIRONMENTAL ANALYSIS

The following sections discuss the Project's potential impacts on environmental resources. Our description of the affected environment is based on a combination of data sources, including desktop resources such as scientific literature and regulatory agency reports, information from resource and permitting agencies, scoping comments, and field data collected by WBI Energy and its consultants that has provided in its application and in response to information requests from our staff.

The environmental consequences of the Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts occur during construction with the resource returning to preconstruction condition almost immediately afterward, or within the next full growing season. Short-term impacts could continue between 1 to 3 years following construction, and up to 5 years for intermediate impacts leading to fully successful recovery. Impacts were considered long-term if the resource would require more than 5 years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project which is expected to be a minimum of 50 years. When determining the significance of an impact(s), we consider the duration of the impact; the geographic, biological, and/or social context in which the impact would occur, and the magnitude and intensity of the impact on specific resource(s).

Our impacts conclusions and determinations of significance are based on the successful restoration of affected lands, a process, dependent on a number of factors, and may be accomplished relatively quickly (1 to 2 growing seasons) or may require several years to complete. Restoration of affected lands can be adversely affected by weather conditions such as drought or abnormal rainfall, landowner actions (e.g., physical changes to land use, cattle grazing), and/or third-party actions including non-Project use/activities. If initial restoration activities are unsuccessful, affected lands may exhibit uneven grades, ponding, rill erosion, inconsistent revegetation, and/or other adverse conditions that are not consistent with preconstruction conditions. Some of these restoration issues may require additional attention by the applicant or may resolve themselves through normal land use practices and/or natural processes. Ineffective restoration may result in unexpected impacts and the prolonging of impacts described in the following analyses. It is our expectation that if initial restoration activities are unsuccessful, WBI Energy, in consultation with the affected landowner and consistent with our environmental compliance monitoring and reporting requirements, would continue to assess, take action, and implement measures to ensure the eventual restoration of the affected resources.

In the following sections, we address direct and indirect effects collectively, by resource. The analysis contained in this EIS is based upon WBI Energy's application and supplemental filings, and our experience with the construction and operation of natural gas transmission infrastructure. Additionally, if the Project is approved and proceeds, it is not uncommon for a project proponent to request minor modifications (e.g., minor changes in workspace configurations). These changes are often identified by a project proponent once on the ground implementation of work is initiated. Any Project modifications would be subject to review and approval by FERC (see the discussion of variances in section 2.4) and any other applicable permitting/authorizing agencies with jurisdiction.

4.1 GEOLOGICAL RESOURCES

4.1.1 Geological Setting

The Project is in the Red River Basin, an area of the Pleistocene epoch glacial lake, Lake Agassiz, in eastern North Dakota. Lake recession occurred approximately 9,000 years ago leaving a thick, fine silts

and clays (Bluemle, 2021). Deposition within the Project area was influenced by glaciation, flooding, postglacial rebound, and smaller glacial lakes, predating Lake Agassiz (Bluemle, 2021).

The surficial geology in the Project area consists primarily of Quaternary (Pleistocene and Holocene) age glacial till, glaciolacustrine, and glaciofluvial (originating from streams carrying glacial runoff) sediments. The thickness of glacial drift ranges from approximately 130 feet to 490 feet (Klausing, 1968; Baker Jr., 1967). Glacial deposits in the Project area are referred to as the Coleharbor Group, which predominantly consist of glacial lake sediments. The Coleharbor Group underlies the proposed pipeline between approximate MPs 11.8 and 16.6, MPs 51.8 and 52.4, MPs 55.2 and 56.9, and MPs 57.9 and 60.5 (North Dakota Geological Survey [NDGS], 2021a).

Portions of the Project area are underlain by fluvial sands, silts, and organic clays of the Quaternary aged Oahe Formation (Clayton et al., 1976). Here, organic silts and clays were deposited in sloughs and in shallow channels, and then eroded during deglaciation. These sediments are dissected and overlie the sand and gravel of the glacial Coleharbor Group. Other overlying sediments were deposited by Late Quaternary streams, intermittent runoff from valley sides, and wind throughout the Project area. The Oahe Formation deposits are generally thin and confined to valley and slough bottoms. The Oahe Formation found in sloughs consists of fine-grained, organic-rich sediment deposited by runoff from surrounding higher ground, wind, and the decomposition of vegetation that grows in the wet environment (Clayton et al., 1976). The pipeline would cross loess deposits of the Oahe Formation between approximate MPs 32.9 and 37.0 and alluvium of the Oahe Formation between approximate MPs 0.0 and 11.8, MPs 16.6 and 32.9, MPs 37.0 and 51.8, MPs 52.4 and 55.2, and MPs 56.9 and 57.9 (NDGS, 2021a).

Underlying bedrock in the region consists of crystalline Precambrian basement rock, overlain by Cretaceous sedimentary rocks including the Dakota (also referred to as Inyan Kara) sandstone, Graneros (also referred to as Mowry, Belle Fourche, and Newcastle) shale, and the Greenhorn Formation (Klausing, 1968; Baker Jr., 1967). The Graneros (Mowry, Belle Fourche, and Newcastle) shale underlies the Project area between approximate MP 0.0 and 19.3, MPs 32.0 and 33.2, MPs 37.4 and 44.6, and MPs 55.2 and 60.5. The Cretaceous-age Dakota (Inyan Kara) formation, which consists of fine to coarse-grained sandstone with interbedded shale, underlies the Project area between approximate MPs 44.6 and 46.2, MPs 49.0 and 52.3, and MPs 53.1 and 55.2. Between approximate MPs 19.3 and 32.0, MPs 33.2 and 37.4, MPs 46.2 and 49.0, and MPs 52.3 and 53.1, Precambrian crystalline rocks underlie the surficial sediments (NDGS, 2021b).

Based on the average depth of sediments in the region, bedrock is not anticipated to be encountered within Project excavations.

4.1.2 Mineral Resources

Glacial sediments within the boundary of glacial Lake Agassiz cover three-fourths of North Dakota and contain sand and gravel, mined for industrial and commercial purposes (Murphy, 2021; USGS, 2021a). Sand and gravel are the third largest mineral industry in the state after oil and gas, and lignite. The closest mineral resource site is the Turner Pits Mill construction sand and gravel mine, approximately 10 miles northeast of MP 41 (USGS, 2021b). No gravel or scoria pits or abandoned mines were identified within 0.5 mile of the proposed Project (ESRI, 2021; NDDOT, 2022; NDPSC, 2021). Therefore, it is not anticipated that the Project would affect existing nonfuel mineral resources.

According to the North Dakota Department of Mineral Resources database, no permitted oil and gas wells are within 0.25 mile of the Project (North Dakota Department of Mineral Resources, 2021). Therefore, the Project would not affect existing fuel mineral resources.

4.1.3 Geologic Hazards

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards typically are seismic-related, including earthquakes, mass wasting events such as landslides and slump or debris flows, land subsidence or collapse, and flooding and scouring along waterbodies.

4.1.3.1 Seismic-Related Hazards

USGS National Seismic Hazard Probability Mapping shows that for the Project area, within a 50-year period, there is a 10 percent probability of experiencing an earthquake with an effective peak ground acceleration of between 0 and 1 percent gravity and a 2 percent probability of experiencing an earthquake with an effective peak ground acceleration of 2 to 4 percent gravity (Rukstales and Petersen, 2019). For reference, a peak ground acceleration of 10 percent gravity (0.1 g) is generally considered the minimum threshold for damage to older structures or structures not constructed to resist earthquakes.

Earthquake records for Minnesota and North Dakota report the closest recorded earthquake to the Project area was a 3.0- to 3.9-magnitude earthquake that occurred in 1939 (Chandler, 2020). The 1939 earthquake was about 47 miles east-northeast of MP 11.0 and categorized as a IV on the Modified Mercalli Intensity Scale (Chandler, 2020). Due to the distance from the earthquake epicenter, it is unlikely that any portion of the Project area felt effects from this earthquake.

In general, modern electric arc welded steel pipelines have not sustained damage during seismic events except due to permanent ground deformation or traveling ground-wave propagation greater than or equal to a Modified Mercalli Intensity of VIII (O'Rourke and Palmer, 1996). The main risk to pipelines and aboveground facilities would be a fault that displaces laterally during an earthquake. According to the United States Geological Survey (USGS) Quaternary Fault and Fold Database (USGS, 2021c) Project facilities are not underlain by this type of feature.

Based on the magnitude of recent and historic seismic activity and the distance of earthquake epicenters from Project areas, as well as the absence of active faults underlying the Project area, we conclude that the Project is not likely to be significantly impacted by seismicity. The Project is in an area of low seismic hazard, and therefore, the potential for soil liquefaction to occur is negligible.

4.1.3.2 Ground Subsidence

Ground subsidence, rapid sinking or gradual settling of the ground surface, can be caused by sinkholes, karst topography, oil and natural gas extraction, and underground mines. No sinkholes, karst or recent subsidence events were identified near the Project area (Bluemle, 1983). As described above, there are no subsurface mines or oil and gas wells within 0.25 mile of the Project area. Therefore, incidents of subsidence within the Project area would be unlikely.

4.1.3.3 Landslides

Landslides are defined as the movement of rock, debris, or soil down a slope. Slope failure causing a landslide can be initiated by precipitation, seismic activity, slope disturbance due to construction, or a change in groundwater conditions, such as a seasonal high groundwater table, or soil characteristics. Susceptibility to landslides is rated from low to high, based on the percent of an area affected by landslides (Godt, 2014). According to the *Landslide Overview Map of the Conterminous United States,* the Project area is rated as low for landslide incidents (less than 1.5 percent of the area affected by landslides) (Godt, 2014).

Based on review of landslide deposit maps, small landslide deposits were mapped at the crossings of Antelope Creek (MP 50.8) and the Wild Rice River (MP 51.1) (NDGS, 2021a). These waterbodies would be crossed via guided bore, and the proposed entry and exit points would be set back from the stream bank at least 200 feet.

According to the National Elevation Dataset, more than 99 percent of the Project would be within areas with slopes of less than or equal to 10 percent (USGS, 2013). The Project would cross slopes between 10 and 20 percent at MPs 18.77, 18.78, and 24.15 (Sheyenne River). The Project would cross a maximum slope of 35.3 percent at the Sheyenne River crossing (MP 24.14). Because the areas of the Project with slopes greater than 15 percent would be crossed via guided bore, the Project would not impact steep slopes and would not be impacted by landslides.

4.1.3.4 Flood Hazards

The Project could be impacted by flash flooding due to its proximity to streams, rivers, and other nearby waterbodies. Data from the Federal Emergency Management Agency (FEMA) indicate the proposed MDU-Kindred Border Station and Block Valve 3 at MP 11.6 would be within a floodplain. Construction of these facilities would create about 778 square feet (about 0.02 acre) of impervious surface. In addition, the existing Mapleton Compressor Station is also within the 100-year floodplain for the Maple River. According to WBI Energy, compensation for a reduction of flood storage due to construction of the MDU-Kindred Border Station and Block Valve 3 at MP 11.6 would be included in Cass County floodplain permits.

Heavy precipitation in short periods of time and/or snowmelt during spring thaw can cause flash flooding along streams. The Project would cross perennial waterbodies including the Wild Rice River, Pitcairn Creek, the Sheyenne River, and the Maple River, via guided bore. In order to minimize impacts, the pipeline would be installed about 15 to 25 feet below the streambed and weighted, as necessary, to prevent scour or flooding from exposing the pipeline per 49 CFR 192. WBI Energy would inspect all stream crossings annually for signs of scour.

In its comments on the Project, the EPA recommends that the EIS consider ongoing and projected regional and local changes in climate, including the frequency and severity of storms, precipitation, and flooding. Separately, the EPA has assessed indicators of climate change and summarizes this information in its *Climate Change Indicators in the United States*.[9] Included in the summary is a conclusion that a larger percentage of "heavy precipitation" events, in recent years, have come in the form of intense single-day events.[10] "Heavy precipitation," which refers to instances during which the amount of rain (or snow) experienced in a location substantially exceeds what is normal, and intense single-day events can increase the risk and intensity of project-related impacts on the environment. Based on our experience regulating the construction of interstate natural gas transmission pipeline projects, heavy precipitation and intense single-day events are not wholly uncommon, especially for projects in which construction spans several months, and it is reasonable to expect that one or more of these events may occur during a project's construction. Predicting these and other extreme weather events (hurricanes and tropical storms) is difficult; however, should an extreme weather event occur (heavy precipitation or an intense single-day event), Project workspaces could become inundated, spoil piles could experience some erosion, and erosion control devices could be overwhelmed. Individually or collectively, these actions may result in off-right-of-way impacts and would likely increase rates of erosion, turbidity, and sedimentation. These impacts could in turn affect soil/slope stability, water quality, aquatic wildlife, and other environmental resources.

[9] EPA (2021) Climate Change Indicators: Heavy Precipitation. Accessed August 2022. https://www.epa.gov/climateindicators/climate-change-indicators-heavy-precipitation#tab-2.

[10] The prevalence of extreme single-day precipitation events remained fairly steady between 1910 and the 1980s but has risen substantially since then. Over the entire period from 1910 to 2020, the portion of the country experiencing extreme single-day precipitation events increased at a rate of about half a percentage point per decade.

In addition, extreme 1-day precipitation events may lengthen the amount of time required to adequately restore the construction right-of-way. If off-right-of-way impacts occur, WBI Energy would need to request additional approvals from FERC and affected landowner to access these off-right-of-way areas to remediate the erosion and clean up the sedimentation.

Should WBI Energy fail to address such impacts in a timely fashion, the Project would be out of compliance with the requirements contained within the Plan. Specifically, the Plan requires that project proponents inspect and ensure the maintenance of temporary erosion control measures within 24 hours of each 0.5 inch of rainfall. The Plan then requires that the repair of all ineffective temporary erosion control measures occurs within 24 hours of identification, or as soon as conditions allow. The occurrence of an incident involving off-right-of-way sediment transport in the Project area is more likely now than in the past; however, it should be noted that the measures in the Plan ensure that once an incident occurs, it will be remediated.

4.1.3.5 Blasting

In general, the potential for blasting exists at locations where a project or excavation my encounter shallow bedrock. However, US. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) soil survey data indicate the Project area does not contain soils where bedrock is shallower than 60 inches from the ground surface (USDA NRCS, 1975, 1985). Therefore, WBI Energy does not anticipate that blasting would be necessary; however, blasting may be necessary if shallow bedrock or boulders could not be removed using conventional methods. If blasting is necessary, WBI Energy would implement the procedures described in its *Blasting Plan*, which we have reviewed and find acceptable.

Blasting would be conducted by licensed professionals in compliance with applicable local, state, and federal regulations and permits governing the use of explosives. Mitigation measures, including the use of mats to control fly rock, would be implemented to avoid or minimize impacts on nearby structures. Occupants of nearby structures would be notified at least 48 hours in advance of blasting activities. Pre- and post-blast inspections would also be conducted of aboveground structures, wells, and springs within 200 feet of the blast site with landowner permission. WBI Energy would also require that the blasting contractor prepare a detailed, site-specific plan for each event for approval by WBI Energy.

4.1.3.6 Guided Bore Crossings

As noted in section 2.3, WBI Energy proposes to cross roads, highways, driveways, railroads, wetlands, and waterbodies via 73 guided bores at 80 locations.

The guided bore method is a trenchless construction method that uses a guided bore head to excavate a bore hole under a feature and then pull a prefabricated pipe string through the excavated hole. To complete the guided bore, work areas and pits would first be prepared to accommodate the equipment and boring process. Guide wires would be laid on the ground in a 2- to 3-foot-wide corridor to assist with steering of the cutting head. The drilling rig would be placed on the entry side and a pilot hole would be bored followed by the reaming process with increasingly larger drill heads to excavate the bore to the correct diameter. Boring would take place for either 12 or 24 hours per day, for 1 to 15 days, depending on the location and the feature crossed. The boring equipment would contain instrumentation to monitor boring progress and parameters, including fluid flowrate and pressure. Once the desired diameter of the hole is reached, the prefabricated pipe string would be pulled through the bore hole from the exit side toward the entry side. This section of pipe may be hydrostatically tested prior to installation.

4.1.4 Paleontological Resources

Paleontological resources are the fossilized remains of prehistoric plants and animals, as well as the impressions left in rock or other materials. Paleontological resources are sometimes discovered at locations under excavation or in areas exposed by erosion. Direct and indirect effects on paleontological resources could result during Project construction. The Project would cross several geologic units that could contain paleontological resources including the Coleharbor Group. However, paleontological remains found within the Coleharbor Group tend to be poorly preserved (Hoganson, 2006), and few fossils have been found in Richland County (Baker Jr., 1967). Therefore, high-quality paleontological resources are not expected during construction of the Project.

In the event that paleontological resources are encountered during construction they would be managed in accordance with WBI Energy's *Plan for Unanticipated Discovery of Paleontological Resources during Construction.* Work would be temporarily suspended in the immediate area of the paleontological finding while a qualified paleontologist is consulted to determine the appropriate actions if the find is determined to be a significant paleontological resource. WBI Energy would also notify the appropriate officials with an account of the discovery and actions would be taken. Upon discovery of potential paleontological resources during Project construction, WBI Energy would follow applicable laws, regulations, procedures, and would follow procedural guidelines for the management and mitigation of adverse impacts on paleontological resources. Therefore, we conclude there would be no significant impacts on paleontological resources.

4.2 SOILS

4.2.1 Existing Soil Resources

WBI Energy obtained soil characteristics from the USDA NRCS, Soil Survey Geographic (SSURGO) database (Soil Survey Staff, 2022). Soils were evaluated for attributes like prime farmland designation, compaction potential, erodibility by wind and water, revegetation potential, and depth to bedrock because these soil traits could affect construction or increase the potential for soil impacts during Project construction, restoration, and/or operation. A description of these soil characteristics within the Project area (including impacts and mitigation measures) are provided below. Project area soils are generally classified as very deep, somewhat poorly drained to very poorly drained, and loamy to clayey in texture (USDA, 2006). Project area soils were not classified as rocky or as having a shallow depth to bedrock. Soils are also not considered highly erodible, as less than 5 percent (26.15 acres) are classified as highly erodible by water and less than 3 percent of Project area soils are classified as highly erodible by wind (12.91 acres). Only 2 percent (10.09 acres) of Project area soils have poor revegetation potential. Approximately 91 percent of Project area soils (495.87 acres) are classified as highly compaction-prone and 64 percent (347.02 acres) are classified as hydric soils.

4.2.2 Prime Farmland and Farmland of Statewide Importance

The USDA defines prime farmland as land that has the best combination of physical and chemical characteristics for growing food, feed, forage, fiber, and oilseed crops. Unique farmland is land that is used to produce specific high-value food and fiber crops. In addition, soils may be considered of statewide or local importance if capable of producing a high yield of crops when managed according to accepted farming methods.

TABLE 4.2-1

Acres of Soil Characteristics Affected by the Proposed Project [a]

Facility	Total Acres	Prime Farmland [b]	Hydric [b]	Compaction Prone [c]	Highly Erodible		Revegetation Concerns [f]	Rocky [g]	Shallow Bedrock [h]
					Water [d]	Wind [e]			
Pipeline Right-of-Way									
Permanent Easement	365.6	271.9	232.1	331.5	17.7	8.6	7.1	0.0	0.0
Temporary Workspace	179.1	133.7	115.0	164.3	8.4	4.3	3.0	0.0	0.0
Subtotal	**544.7**	**405.6**	**347.1**	**495.8**	**26.1**	**12.9**	**10.1**	**0.0**	**0.0**
Additional Temporary Workspace	**113.0**	**79.3**	**66.2**	**100.0**	**5.1**	**2.1**	**1.5**	**0.0**	**0.0**
Contractor Yards									
Temporary Workspace									
Kost Yard	34.2	34.2	34.2	34.2	0.0	0.0	0.0	0.0	0.0
Kindred Yard	4.1	1.2	4.1	4.1	0.0	0.0	0.0	0.0	0.0
Comstock North Yard	21.0	17.6	21.0	21.0	0.0	0.0	0.0	0.0	0.0
Wahpeton City Yard	28.5	28.5	0.0	28.5	0.0	0.0	0.0	0.0	0.0
Comstock South Yard	4.7	0.0	1.7	1.7	0.0	0.0	0.0	0.0	0.0
Subtotal	**92.5**	**81.4**	**60.9**	**89.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Access Roads									
Permanent Access Roads	3.2	0.7	2.6	3.0	0.0	0.0	0.0	0.0	0.0
Temporary Access Roads	24.4	17.0	10.6	18.4	0.3	1.3	0.8	0.0	0.0
Subtotal	**27.6**	**17.7**	**13.2**	**21.4**	**0.3**	**1.3**	**0.8**	**0.0**	**0.0**
Aboveground Facilities									
Permanent Workspace									
Mapleton Compressor Station	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MDU—Kindred Border Station	1.7	0.4	1.7	1.7	0.0	0.0	0.0	0.0	0.0

TABLE 4.2-1

Acres of Soil Characteristics Affected by the Proposed Project [a]

Facility	Total Acres	Prime Farmland [b]	Hydric [b]	Compaction Prone [c]	Highly Erodible		Revegetation Concerns [f]	Rocky [g]	Shallow Bedrock [h]
					Water [d]	Wind [e]			
MDU—Wahpeton Border Station	1.7	1.7	0.3	1.7	0.0	0.0	0.0	0.0	0.0
Block Valve 1 [i]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Block Valve 2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Block Valve 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Block Valve 4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Block Valve 5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Block Valve 6	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Block Valve 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pig launchers/receivers [j]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Temporary Workspace									
Mapleton Compressor Station	2.9	2.9	2.8	2.8	0.0	0.0	0.0	0.0	0.0
MDU—Kindred Border Station	2.5	1.0	2.5	2.5	0.0	0.0	0.0	0.0	0.0
MDU—Wahpeton Border Station	2.4	2.4	0.5	2.4	0.0	0.0	0.0	0.0	0.0
Block Valve 1 [i]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Block Valve 2	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Block Valve 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Block Valve 4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Block Valve 5	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Block Valve 6	0.3	0.3	0.1	0.3	0.0	0.0	0.0	0.0	0.0
Block Valve 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pig launchers/receivers [j]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	**13.8**	**10.0**	**9.1**	**13.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

TABLE 4.2-1

Acres of Soil Characteristics Affected by the Proposed Project [a]

Facility	Total Acres	Prime Farmland [b]	Hydric [b]	Compaction Prone [c]	Highly Erodible		Revegetation Concerns [f]	Rocky [g]	Shallow Bedrock [h]
					Water [d]	Wind [e]			
Total	**791.5**	**593.9**	**497.0**	**720.9**	**31.6**	**16.2**	**12.4**	**0.0**	**0.0**

Source: Soil Survey Staff, 2022a; 2022b.

[a] The area affected includes all permanent and temporary workspaces (including additional temporary workspace). Numbers may not sum exactly due to rounding. The values in each row may not add up to the total acreage for each facility because the soils may occur in more than one characteristic class or may not occur in any class listed in the table.

[b] As designated by the NRCS. Prime farmland includes those soils that are considered prime if a limiting factor is mitigated (e.g., through artificial drainage) and soils designated as farmland of statewide importance. Hydric soils are soils in poor to very poor drainage classes.

[c] Soils in somewhat poor to very poor drainage classes with surface textures of sandy clay loam and finer.

[d] Soils in land capability subclasses 4E through 8E and soils with an average slope greater than 8 percent.

[e] Soils with a Wind Erodibility Group classification of 1 or 2.

[f] Soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained and soils with an average slope greater than 8 percent.

[g] Soils with one or more horizons that have a cobbley, stony, bouldery, channery, flaggy, very gravelly, or extremely gravelly modifier to the textural class and/or contain greater than 5 percent by weight rocks larger than 3 inches.

[h] Soils identified as containing bedrock within 60 inches of the soil surface.

[l] Block Valve 1 and associated pig launcher/receiver would be constructed and operated within the Mapleton Compressor Station fence line. Block Valves 3 and 7 would be constructed and operated within the construction and operational footprints of the MDU—Kindred Border Station and the MDU—Wahpeton Border Station, respectively. Soil resource impacts for Block Valves 1, 3, and 7 are accounted for in the soil resource impacts for the compressor station modification and MDU Border Stations.

[j] The four pig launcher/receiver settings would be collocated with Block Valves 1, 2, 5, and 7; therefore, soil resource impacts for the pig launchers/receivers are accounted for in the soil resource impacts for the four valve sites or other aboveground facilities (i.e., the compressor station modifications and the MDU—Wahpeton Border Station).

About 593.9 acres (75 percent) of soils to be impacted by construction are designated as prime farmland or farmland of statewide importance (table 4.2-1). Aboveground facilities would affect 10 acres of prime farmland soils. About 3.1 acres of prime farmland or farmland of statewide importance would be permanently converted to commercial/industrial use for construction of aboveground facilities and permanent access roads. Impacts on prime farmland soils resulting from pipeline construction and operation would be temporary and short-term because the pipeline would be buried and the disturbed soils within the construction and permanent right-of-way would revert to preconstruction uses or be maintained in an herbaceous state. Agricultural use would be allowed to continue within the pipeline right-of-way, with the exception of deep-rooted crops, such as orchards or tree farms. WBI Energy would minimize impacts on prime farmland and farmland of statewide importance soils by segregating topsoil in accordance with its Plan and Procedures. Therefore, we conclude that impacts on prime farmland and farmland of statewide importance would be temporary and not significant.

4.2.3 Drain Tiles and Irrigation Systems

Installation of the pipeline and aboveground facilities could damage drain tiles and irrigation systems. Based on conversations with landowners, WBI Energy estimates that the pipeline would cross about 5.55 miles of drain tiled fields (table 4.2-2). No other irrigation systems have been identified within the Project area.

TABLE 4.2-2

Drain Tiled Fields Crossed by the Pipeline Route [a]

County	MP In	MP Out	Length (miles)
Cass			
	12.15	12.16	0.01
	23.33	24.15	0.82
Subtotal Cass County			**0.83**
Richland			
	31.87	32.36	0.50
	32.49	32.61	0.05
	35.06	35.63	0.57
	37.54	38.04	0.50
	41.03	42.40	1.36
	44.43	44.92	0.50
	44.95	45.43	0.48
	46.17	46.42	0.25
	48.89	49.39	0.50
Subtotal Richland County			**4.71**
Total			**5.55**

[a] Drain tile locations were identified based on communications with landowners and may not include all drain tiles.

During grading and trenching, crews would flag previously undocumented drain tiles at the edge of the right-of-way and coordinate with landowners and drain tile professionals to move, restructure, or replace existing drain tiles as necessary. Crews would install the proposed pipeline under existing drain tiles, unless tile locations are deep enough to maintain sufficient clearance between the tile and the pipeline. Crews would mark any damaged, cut, or removed tiles. WBI Energy would install screens within damaged but still-flowing drain tiles to prevent entry of soil or other foreign materials. Temporary repairs to maintain water flow would be completed until permanent repairs are possible. Damaged drain tiles (without flow) would be screened and temporarily repaired within 24 hours. WBI Energy has committed to replace damaged, broken, or cracked drain tiles with new tiles of equal or greater quality, size, and flow to the damaged tile.

4.2.4 Compaction Potential

Soil compaction can occur by the repeated movement of heavy machinery across soils with high shrink-swell potential and poor drainage characteristics (e.g., soils with high clay content). About 720.9 acres (91 percent) of the soils that would be impacted by pipeline construction are prone to compaction. To avoid or minimize soil compaction and rutting, WBI Energy would implement measures described in its Plan and Procedures such as restricting construction activities in areas of unfavorable conditions (e.g., saturated soils). WBI Energy would further mitigate compaction by utilizing a paraplow or similar heavy equipment to conduct deep tillage operations during restoration. In areas where topsoil segregation occurs, plowing to alleviate subsoil compaction would be conducted before replacement of the topsoil.

4.2.5 Soil Erosion and Revegetation Potential

Soil erosion is due to physical weathering by wind and water and could result in a loss of soil structure, organic matter, and nutrients. Soil erosion potential is affected by numerous factors including soil texture, soil structure, organic matter content, and permeability, and is influenced by slope and the intensity of the exposure to erosive forces. Clearing, grading, and equipment movement can also accelerate the erosion process and, without adequate protection, result in entrainment of sediment to waterbodies and wetlands.

Pipeline construction would affect about 31.6 acres (4 percent) of soils considered susceptible to erosion by water. Approximately 16.2 acres (2 percent) of the soils that would be impacted by pipeline construction are considered highly wind erodible.

WBI Energy would install erosion and sediment control devices along construction workspaces in accordance with the Plan and Procedures. Temporary erosion control measures would be installed immediately following initial ground disturbance. WBI Energy would inspect temporary erosion control devices on a regular basis and after each rainfall event of 0.5 inches or greater to ensure proper function. Temporary erosion control devices would be maintained until Project areas are successfully revegetated or permanently stabilized with gravel. As outlined in its *Fugitive Dust Control Plan*, WBI Energy would control dust within construction workspaces with water, mulch, or tackifiers to minimize wind erosion.

WBI Energy would also install temporary slope breakers and permanent trench breakers, as discussed in section 2.0. Temporary slope breakers installed across the right-of-way would slow stormwater velocity and divert stormwater from the right-of-way. Permanent trench breakers would prevent transit of water along the trench.

In accordance with the Plan, WBI Energy will reseed areas, as necessary, to properly revegetate disturbed areas during operation of the Project and apply standard soil amendments to offset nutrient loss and maximize plant establishment. WBI Energy consulted with regional NRCS and Farm Service Agency offices on the proposed seed mixes. Based on recommendations from the NRCS, WBI Energy would use

seed mixes per the NDDOT *2020 Standards and Specifications for Road and Bridge Construction*. Topsoil would be segregated in non-saturated wetlands, cultivated or rotated croplands, managed pastures, hayfields, residential areas, and in other areas requested by the landowner or land managing agency. WBI Energy would monitor the right-of-way and identify any revegetation problems that might arise due to unforeseen circumstances during operation of the pipeline. Given WBI Energy's proposed mitigation measures (disturbed areas would be restored, returned to preconstruction land use, or otherwise stabilized) permanent impacts due to soil erosion or poor revegetation are not anticipated.

4.2.6 Rocky Soils and Shallow Bedrock

Soils with textural classifications including stony, cobbly, gravelly, shale, slate, and droughty in any layer, or with stones larger than 3 inches in the surface layer in greater than 5 percent of the area may be characterized as stony or rocky soils. No rocky or stony soils were identified in Project workspaces (table 4.2-1). WBI Energy would also remove stones and excess rock from disturbed soil so that the post-construction right-of-way would have the same distribution of size, density, and distribution of rock as similar undisturbed areas. Excess rock/stone would be disposed of off right-of-way or disposed of on right-of-way with landowner approval.

No shallow bedrock (bedrock within 60 inches of the ground surface) was identified within the Project workspace.

4.2.7 Saline Soils

Saline soils have excessive levels of soluble salts, such as sodium, calcium, magnesium, and chloride, which can negatively affect plant growth (USDA, 2022). WBI Energy identified slightly to moderately saline soils along portions of the pipeline, access roads, and at one valve site. During construction, the EIs would visually inspect soils for signs of saline soils, such as white crusts and/or spots, salt rings, and poor vegetation growth. WBI Energy would return saline soil to areas from which it was excavated and avoid deep tillage in these areas.

4.2.8 Soil Contamination

WBI Energy conducted a search of the EPA's EnviroFacts website and dataset (EPA, 2021b; 2021c) to identify facilities and environmental incident locations within 0.25 mile of the Project that have actual, or the potential for, soil contamination. Based on this review, the Project would not cross sites with known existing soil contamination. In addition, a review of NDDEQ underground storage tank data did not identify any known underground storage tank sites within 500 feet of the Project (NDDEQ, 2021). Groundwater contamination is discussed in section 4.3.1.

Project-related soil contamination resulting from spills or leaks of fuels, lubricants, and coolant from construction equipment would be minimized by WBI Energy's adherence to its SPCC Plan and its *Plan for Unanticipated Discovery of Contaminated Environmental Media*. The SPCC Plan specifies measures and cleanup procedures in the event of spills or leaks of hazardous materials.

Should a spill occur, WBI Energy and its contractors would follow the SPCC Plan to contain the spill of any material that may contaminate soils and to ensure that the spill area is cleaned up and the materials are disposed of and reported in an appropriate manner. WBI Energy would report spills to the North Dakota Department of Health, the North Dakota Department of Emergency Services and/or the National Response Center as appropriate. As outlined in its *Plan for Unanticipated Discovery of Contaminated Environmental Media*, WBI Energy would monitor excavations during construction for evidence of potential contamination, as identified by evidence of subsoil discoloration, odor, sheen, or other

indicators. If contaminated soil is encountered, WBI Energy would stop work and implement measures which may include:

- stop work in the vicinity of the suspected contamination;
- restrict access to the suspected area;
- immediately notify the EI;
- conduct a site assessment to confirm the soil in question is contaminated;
- initiate measures to avoid the spread of contaminants until the nature of the contamination is verified; and
- notify appropriate federal, state, and local regulatory agencies including the North Dakota Department of Health and/or the National Response Center.

Given the characteristics of Project area soils and the impact minimization and mitigation measures that would be implemented through adherence to WBI Energy's Plan and Procedures, SPCC Plan, and *Plan for Unanticipated Discovery of Contaminated Environmental Media*, we conclude that impacts on soils would not be significant.

4.3 WATER RESOURCES

4.3.1 Groundwater Resources

The aquifers in the Project area consist of sedimentary bedrock of the Northern Great Plains region (Sun and Johnston, 1994). The two primary types of aquifer in the Project area are sand and/or sandstone beds in the Dakota Sandstone and sand and gravel deposits associated with glacial drift (Klausing, 1968; Baker & Paulson, 1967). The Wahpeton Buried Valley aquifer is the most significant bedrock aquifer along the Project route, providing most of the drinking water for the City of Wahpeton. The proposed pipeline would cross the Wahpeton Buried Valley aquifer from MPs 52.4 to 53.1 and from MPs 55.2 to 56.2. The Project would not impact this aquifer, as it is approximately 150 feet below ground surface, and Project excavation would be in the range of less than 6-8 feet for general trenching, with certain bores crossing about 25 feet below ground surface.

Supply wells within the Dakota Sandstone are generally deeper than 200 feet below ground surface, have relatively small yields, and are generally not suitable for human consumption. These wells are used primarily for livestock (Baker & Paulson, 1967).

Localized alluvial and glacial aquifers, consisting of unconsolidated glacial outwash deposits, overly bedrock aquifers. The Project would cross one alluvial and one glacial aquifer: the West Fargo aquifer between MPs 9.2 and 10.1 in Cass County, and the Colfax aquifer between MPs 37.7 and 40.6 and between MPs 42.9 and 49.8 in Richland County.

The West Fargo aquifer consists of glaciofluvial deposits of fine to coarse sand, and has an average thickness of approximately 60 feet. The upper contact ranges from 80 to over 100 feet below ground surface (Klausing, 1968). This aquifer is utilized for municipal, industrial, and agricultural purposes. It supplied drinking water to the residents of West Fargo until 2016 when West Fargo began purchasing municipal water from the City of Fargo (City of West Fargo, 2016).

The Colfax aquifer is comprised of buried glacial outwash sand with a maximum thickness ranging from 50 to 80 feet. The upper contact is approximately 100 to 150 feet below ground surface. A small allocation of this aquifer is utilized for agricultural purposes (Baker & Paulson, 1967).

Potable and domestic use water, in addition to the named alluvial and glacial aquifers, is derived from unnamed and unconsolidated sand and gravel aquifers. These aquifers consist of thin beds, randomly distributed both vertically and laterally (Paulson, 1983). While wells in these minor aquifers generally produce yields less than 10 gallons per minute, the yields are adequate for domestic farmsteads (Paulson, 1983).

4.3.1.1 Sole Source Aquifers

A sole source aquifer is defined by the EPA as an aquifer that supplies greater than 50 percent of the drinking water for an area, and for which there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer should it become contaminated (EPA, 2018). The Project does not overlie any sole source aquifers as there are no designated sole source aquifers in North Dakota (EPA, 2021b).

4.3.1.2 Wellhead Protection Areas, Water Supply Wells, and Springs

Wellhead protection areas are determined by the NDDEQ Source Water Protection Program. According to NDDEQ mapping, no wellhead protection areas would be crossed by the Project and no wellhead protection areas are within 0.25 miles of the Project (NDDEQ, 2021a).

Using data from the 2021 North Dakota State Water Commission well permit database and online map system, WBI Energy identified two private water supply wells within 150 feet of the proposed pipeline. One domestic use well is 144 feet northwest of MP 9.3, and one observation well is 135 feet northwest of MP 55.9. During surveys, WBI Energy would verify the location of these two water wells and identify any other water wells within 150 feet of Project workspaces.

The primary method for wastewater treatment in rural North Dakota are onsite septic systems. Potential impacts on septic systems were minimized by routing the pipeline to avoid residences. The proposed Project workspace (minus contractor yards) would come within 500 feet of residences in 14 locations. One residence would be approximately 75 feet east of access road AR_027, and the remaining residences would be over 200 feet from proposed workspaces. Due to these distances, impacts on septic systems from construction activity are not anticipated. WBI Energy will coordinate with landowners to determine the exact location of septic systems so they could be protected. WBI Energy would repair active septic systems damaged during construction to its previous condition or better.

4.3.1.3 Groundwater Contamination

No livestock feedlots, municipal landfills, or sewage lagoons were identified within 0.25 mile of the Project workspace based on WBI Energy's review of aerial photographs and current field survey data. No known sites of potential groundwater contamination within 500 feet of the Project were identified in the EPA's Facility Registration System map service or the NDDEQ's underground storage tank data (EPA, 2022; NDDEQ, 2021b).

4.3.1.4 Construction and Operation Impacts and Mitigation

Surface drainage and groundwater recharge patterns could be temporarily altered by clearing, grading, trenching, dewatering, and soil stockpiling activities, potentially causing minor fluctuations in groundwater levels and/or increased turbidity, particularly in shallow surficial aquifers. We expect the resulting changes in water levels and/or turbidity in these aquifers to be localized and temporary because water levels quickly re-establish equilibrium and turbidity levels rapidly subside. The addition of impervious surfaces at aboveground facilities may affect overland flow patterns and subsurface hydrology.

These effects would be highly localized and minor, due to the small area of proposed permanent impervious surface installments, and therefore impact from the Project would not be significant.

The pipeline would be installed at a depth sufficient to provide 48 inches of cover after grading, which is well above the depth of aquifers within the Project area.

WBI Energy would adhere to its SPCC Plan and Guided Bore Plan. Some of the measures that WBI Energy would follow to protect groundwater include:

- prohibiting overnight parking, refueling, and the storage of hazardous chemicals within 200 feet of wells and springs;
- installing secondary containment around stationary equipment with leak potential;
- inspecting equipment regularly and allowing refueling and maintenance only in designated areas;
- installing trench plugs to mitigate groundwater diversion along the pipeline; and
- limiting the use of guided bore fluid additives to those that are American National Standards Institute/NSF International 60-certified.

WBI Energy would conduct preconstruction and post-construction water quality and yield testing and/or sampling, with landowner permission, for water wells within 150 feet of workspaces. WBI Energy would analyze any damaged water supply systems/wells and complete the necessary repairs and/or modifications to restore the system to its former capacity. If construction damages a water well or water supply system beyond repair, WBI Energy would provide a temporary water source and replace the well or water system. Additionally, WBI Energy would provide a temporary water source if an active well had to be removed from service during construction.

As discussed in section 4.2.8, WBI Energy would monitor excavations during construction for signs of potential contamination. If contaminated groundwater is encountered, WBI Energy would implement the measures outlined in its *Plan for Unanticipated Discovery of Contaminated Environmental Media.*

WBI Energy proposes to use the guided bore method to install pipeline at 73 locations, crossing beneath 80 features along the pipeline route (a description of the guided bore crossing method can be found in section 2.3.2). These features include paved roads, interstate highways, driveways, railroads, tree rows, wetlands, and waterbodies. In some instances, multiple features would be crossed with one guided bore. The guided bore method utilizes drilling fluid comprised primarily of water and bentonite (a naturally occurring clay mineral). Other additives may be included in the drilling fluid to enhance the drilling process and maintain borehole integrity. Additives would be non-petrochemical and non-hazardous and conform to American National Standard Institute / National Sanitation Foundation Standard 60. Material safety data sheets for additives would be provided to the Commission prior to construction.

An inadvertent return of drilling fluid could occur, but potential impacts from inadvertent returns would be reduced by implementation of WBI Energy's Guided Bore Plan. Based on the low potential for guided bore methods to result in a significant loss of drilling fluid, the non-hazardous composition of the drilling fluid, and the few nearby water supply wells, we conclude that the guided bore method would not pose a significant risk to groundwater resources.

The Project's impacts on groundwater resources would be temporary and minor due to the limited vertical extent of excavations and other ground disturbances and the relatively short duration of construction. Minor, permanent, impacts on subsurface hydrology from the installation of new, impermeable, surfaces associated with aboveground facilities are anticipated. WBI Energy's commitment

to implement its SPCC Plan, as well as its Plan and Procedures, would mitigate impacts on groundwater resources. Therefore, we conclude that impacts on groundwater would be minor and not significant.

4.3.2 Surface Water Resources

Watersheds are classified by regions that drain into the same river system, which can be defined by topography. Many smaller watersheds (also known as sub-basins and subwatersheds) are contained within larger watersheds. The Project would cross two watersheds: the Devils Lake-Sheyenne and Upper Red River watersheds. The Project would cross two Hydrologic Unit Code (HUC)-8 sub-basins within the Devils Lake-Sheyenne basin (Maple River and Lower Sheyenne River) and three HUC-8 sub-basins within the Upper Red River watershed (Western Wild Rice River, Bois de Sioux River, and Upper Red River) (NDDEQ, 2021a). Table 4.3.2-1 provides a summary of the HUC-12 watersheds that would be crossed by the Project, two of which, Calvary Cemetery-Wild Rice River and County Ditch No. 1-Red River, would be crossed twice.

TABLE 4.3.2-1

HUC-12 Watersheds Crossed by the Project

HUC-12#	Name	MP Start	MP End
090202050704	Outlet Maple River	0.0	2.6
090202050603	City of Fife	2.6	7.2
090202050602	City of Mapleton	7.6	8.2
090202040605	City of Warren [a]	8.2	18.8
090202040604	City of Norman- Sheyenne River	18.8	24.8
090201051005	Town of Walcott	24.8	36.0
090201051004	South Pleasant Cemetery- Wild Rice River	36.0	41.0
090201051003	Town of Colfax-Wild Rice River	41.0	43.3
090201051002	Pitcairn Creek	43.3	45.4
090201051001	090201051001-Wild Rice River	45.4	50.4
090201050906	Town of Glachutt	50.4	50.4
090201050907	Outlet Antelope Creek	50.4	51.0
090201050805	Calvary Cemetery-Wild Rice River	51.0	52.0
090201040401	County Ditch No. 1-Red River	52.0	56.0
090201050805	Calvary Cemetery-Wild Rice River [c]	56.0	58.6
090201040401	County Ditch No. 1-Red River [b]	58.6	60.5
090202050601	City of Kindred	MDU-Kindred Kindred Yard	Border Station,
090201010507	Bois de Sioux River	Comstock South Yard	

[a] The Kost Yard would be within the City of Warren watershed.
[b] The Wahpeton City Yard would be within the Calvary Cemetery-Wild Rice River watershed.
[c] The Comstock North Yard would be within the County Ditch No. 1-Red River watershed.

WBI Energy completed field surveys in 2021 and 2022 to delineate all surface water resources within the Project construction workspaces. USGS mapping and aerial photography were used for areas that were not field surveyed. The EPA recommended that all aquatic resources surrounding the Project area be identified and characterized, mapped, and delineated. Waterbodies are classified as perennial, intermittent, or ephemeral. Perennial waterbodies flow or contain standing water year-round and are

typically capable of supporting populations of fish and macroinvertebrates. Intermittent waterbodies flow or contain standing water seasonally and are typically dry for a portion of the year. Ephemeral waterbodies generally contain water only in response to precipitation or spring snowmelt. Table 4.3.2-2 below lists the waterbodies crossed or otherwise potentially affected by the Project. The Project includes 19 waterbody crossings, consisting of 10 perennial streams and 9 ephemeral streams (table 4.3.2-2). One ephemeral waterbody would be within construction workspaces, but would not be crossed by the pipeline.

TABLE 4.3.2-2

Waterbodies Crossed by the Project [a]

MP	Unique ID [b]	Waterbody Name [c]	North Dakota Water Quality Classification [d]	Flow Regime [e]	Crossing width (feet)[f]	Pipeline Crossing Method
HUC-12 Watershed 090202050704						
1.2	scad001p	Maple River	Class II	PN	79	Bore
HUC-12 Watershed 090202050603						
3.9	scaa002e	Unnamed tributary to the Maple River	Class III	E	13	Bore
5.9	scaa003e	Roadside ditch	Class III	E	7	Bore
HUC-12 Watershed 090202040605						
10.7	scab001e	Roadside ditch	Class III	E	4	Bore
HUC-12 Watershed 090202040604						
19.7	scab005e	Roadside ditch	Class III	E	9	Bore
HUC-12 Watershed 090201051005						
24.1	scab006p	Sheyenne River	Class IA	PN	42	Bore
HUC-12 Watershed 090201051005						
29.3	sria001e	Roadside ditch	Class III	E	4	Bore
HUC-12 Watershed 090201051004						
39.9	sria002e	Unnamed ditch	Class III	E	8	Bore
41.0	sric002p	Unnamed tributary to Wild Rice River	Class III	PN	23	Bore
HUC-12 Watershed 090201051001						
45.0	srid002p	Pitcairn Creek	Class III	PN	15	Bore
47.4	sird001e	Roadside ditch	Class III	E	NA[g]	NA[g]
HUC-12 Watershed 090201050907						
50.9	Desktop	Antelope Creek	Class II	PN	65	Bore
HUC-12 Watershed 090201050805						
51.1	DSK_WB_03	Wild Rice River	Class II	PN	122	Bore
51.2	DSK_WB_03	Wild Rice River	Class II	PN	146	Bore
51.3	DSK_WB_03	Wild Rice River	Class II	PN	92	Bore
HUC-12 Watershed 090201040401						
55.4	sirb006e	Roadside ditch	Class III	E	6	Bore
HUC-12 Watershed 090201050805						
56.4	sirb005e	Roadside ditch	Class III	E	5	Bore
57.0	sirc006p	Wild Rice River	Class II	PN	78	Bore
57.6	srib004p	Wild Rice River	Class II	PN	38	Bore
HUC-12 Watershed 090201040401						

TABLE 4.3.2-2

Waterbodies Crossed by the Project [a]

MP	Unique ID [b]	Waterbody Name [c]	North Dakota Water Quality Classification [d]	Flow Regime [e]	Crossing width (feet)[f]	Pipeline Crossing Method
58.7	srib003e	Roadside ditch	Class III	E	6	Bore
Access Roads						
HUC-12 Watershed 090201051005						
AR24						
19.3	scab005e	Roadside ditch	Class III	E	6	NA
HUC-12 Watershed 090201051005						
AR32.1						
29.3	sria001e	Roadside ditch	Class III	E	4	NA
HUC-12 Watershed 090201051001						
AR51						
47.3	srid001e	Roadside ditch	Class III	E	4	NA
HUC-12 Watershed 090201050805						
AR60						
56.4	srib005e	Roadside ditch	Class III	E	5	NA
HUC-12 Watershed 090201040401						
AR64						
58.7	sirb003e	Roadside ditch	Class III	E	6	NA

[a] Based on the data from Project field surveys to date, USGS mapping, National Hydrography Dataset data, the North Dakota State Water Commission's geographic information system data viewer, and review of aerial photographs.

[b] Waterbodies that were not surveyed are referred to as "Desktop" or "DSK"; waterbody characteristics for these features are based on the NHD and/or recent aerial photography.

[c] Waterbody names are based on USGS topographic maps.

[d] See text for category definitions (NDDEQ, 2021c). None of the Class III streams are specifically identified in the Stream Classifications Table in Appendix I of the NDDEQ Standards of Quality for Waters of the State and are classified as Class III as a default based on specifications included in that appendix.

[e] Based on field surveys, National Hydrography Dataset designations, and/or aerial photography interpretation for unmapped streams:

[f] Approximate width based on field surveys and/or estimated from aerial photography. Where National Hydrography Dataset data were used to supplement areas where surveys are not complete and assumed less than 10-feet-wide was used for all intermittent National Hydrography Dataset features.

[g] Stream is within workspace but is not crossed by the pipeline centerline.

PN = Perennial

E = Ephemeral

NA = Not applicable (USACE, 2012).

North Dakota Class I streams are suitable for propagation or protection of resident fish and other aquatic species as well as swimming, boating, and other water recreation. Water quality is suitable for irrigation, stock watering, and wildlife, and is suitable for municipal or domestic use after treatment with coagulation, settling, filtration, and chlorination. Class IA streams have the same quality as Class I streams, except where natural conditions exceed Class I criteria for municipal or domestic use, alternate treatment methods may be used for drinking water requirements. Class II streams have the same quality as Class I streams, but additional treatment may be required to meet drinking water requirements, and may be intermittent and so limit the value for supporting aquatic life, irrigation, or recreation. Class III streams are

suitable for agricultural or industrial uses, often have low average flows and periods with no flow, which limits the value for recreation and supporting aquatic life (NDEQ, 2022a).

WBI Energy would cross all waterbodies using the guided bore method (see section 2.2.3). However, in the event that a guided bore were to fail and additional subsequent attempts were unsuccessful, the open-cut method, flume, or dam-and-pump methods could be used as an alternate crossing method. WBI Energy would be required to obtain authorization from the Commission and other applicable agencies in order to change the proposed crossing method for a stream should a guided bore be unsuccessful.

4.3.2.1 Sensitive Waterbodies

Section 303(d) of the Clean Water Act requires that each state review, establish, and revise water quality standards for the surface waters within the state. States develop monitoring and mitigation programs to ensure that water standards are attained and designated. Waters that fail to meet their designated beneficial use(s) are considered impaired and are listed under a state's 303(d) list of impaired waters. In addition to the Section 303(d) list of impaired waterbodies, sensitive waterbodies include waters that have been specifically designated by the state as high quality or exceptional value waterbodies, wild and scenic rivers, and waters supporting fisheries of special concern.

Four waterbodies, the Maple River, the Sheyenne River, the Wild Rice River, and Antelope Creek, that are listed in North Dakota's 2018 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters needing Total Maximum Daily Loads would be crossed by the Project (NDDEQ, 2018). WBI Energy would cross these four waterbodies via guided bore. With implementation of a trenchless crossing method, and adherence to the mitigation measures in the Plan, Procedures, the SPCC Plan, and the Guided Bore Plan, impacts on sensitive waterbodies would be adequately minimized or avoided.

The Project would not cross any waters included in the National Wild and Scenic Rivers System or state-designated high quality or outstanding natural resource waters (Wild and Scenic Rivers Council, 2014).

4.3.2.2 Surface Water Intakes and Surface Water Protection Areas

The North Dakota Source Water Protection Program has three federally mandated program elements for public water systems including: (1) the delineation of a wellhead protection area or source water protection area based on existing hydrogeologic and geologic information; (2) a contaminant source inventory, which identifies the presence and location of sources or activities within the protection area that may contaminate groundwater or surface water; and (3) a susceptibility analysis that determines the susceptibility (ranking) of the public water systems wells or intakes to contamination by sources inventoried within the protection area (NDDEQ, 2022b). Based on the review of the source water protection status list of North Dakota's public water systems, no surface water-dependent communities, non-transient non-communities, or transient non-community systems exist within the Project area (NNDEQ, 2021b).

4.3.2.3 Construction and Operation Impacts and Mitigation

Pipeline construction activities that potentially could affect surface water resources include clearing and grading of streambanks, inadvertent returns during guided bore crossings, and potential spills or leaks of hazardous materials. Potential effects on surface waters from these activities may include modification of aquatic habitat, increased stormwater runoff and the rate of in-stream sediment loading and erosion, turbidity, decreased dissolved oxygen concentrations, releases of chemical and nutrient pollutants from sediments, modification of riparian areas, and the introduction of chemical contaminants such as fuel and lubricants.

The clearing and grading of streambanks would reduce riparian vegetation and expose soil to erosional forces. The use of heavy equipment for construction could cause compaction of near surface soils, an effect that could result in increased runoff into surface waters in the immediate vicinity of the construction right-of-way. Increased surface runoff could transport sediment from uplands into surface waters, resulting in increased turbidity levels and increased sedimentation rates in the receiving waterbody.

The EPA recommends that in-stream monitoring be conducted up and downstream of impacted sites to ensure minimal adverse effects to the aquatic resources, particularly high quality, exceptional value, and impaired waterbodies. As described in section 2.3.2, waterbody crossings are proposed to be completed using the guided bore method, which would avoid most impacts associated with open-cut flume, or dam-and-pump crossing methods. The crossings would be completed in accordance with the measures described in WBI Energy's Procedures, and in accordance with federal, state, and local permits. WBI Energy would comply with any monitoring requirements incorporated in its CWA section 401 permits, if required by the permitting agency.

WBI Energy's proposed use of guided bore to cross all waterbodies would eliminate the need to disturb riparian areas except select vegetation clearing for guide wires and pathways to water (see section 2.3.2 of this EIS). WBI Energy would impact riparian areas for installation of temporary travel lanes and temporary equipment bridges at 10 waterbody crossings. If vegetation removal is necessary at these 10 crossings, WBI Energy would only remove vegetation necessary to allow equipment access within the 50-foot-wide right-of-way between the bore pits. Adherence to WBI Energy's Procedures would also maximize the potential for regrowth of riparian vegetation, thereby minimizing long-term and permanent impacts associated with lack of shade and cover. A strip of riparian vegetation at least 25 feet wide adjacent to waterbodies would typically be allowed to revegetate to preconstruction condition over the entire width of the right-of-way, except for a 10-foot-wide strip centered over the pipeline that may be maintained in an herbaceous state for operational inspection purposes. In accordance with WBI Energy's Procedures, trees would not be allowed to grow within 15 feet of the pipeline.

Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters could create a potential for contamination. If a spill were to occur, immediate downstream users of the water could experience degradation in water quality. Acute and chronic toxic effects on aquatic organisms could also result from such a spill. WBI Energy's SPCC Plan would be implemented to ensure that spill prevention and response protocols are followed to both minimize risk of environmental release and effects from the use of these materials. The SPCC Plan includes protective measures for the storage and handling of chemicals and fueling activities during construction within 100 feet from wetlands and waterbodies.

Use of the guided bore method would avoid direct impacts on the bed and banks of 19 waterbodies; however, a temporary, localized increase in turbidity could occur in the event of an inadvertent release of drilling fluid (generally, a slurry of bentonite clay and water). To minimize potential impacts of inadvertent releases of drilling fluids, WBI Energy would implement the measures identified in its Guided Bore Plan. In the event of an inadvertent release of drilling fluid to surface waters, WBI Energy would contain the release to the extent practicable. Where feasible, underwater releases would be collected using pumps. If the amount of any drilling fluid released within a waterbody exceeds that which could be practically contained and collected, drilling operations would be suspended until the release is controlled. If the guided bore method cannot be completed, WBI Energy would implement a contingency plan for the crossing, such as abandoning the drill hole, drilling along a new path, or utilizing an alternate crossing method subject to Commission approval, agency review, and any required permits or approvals. Given these measures, we conclude that impacts on waterbodies using the guided bore method would be minimized to the extent practicable.

In the event that guided bore is not successful and WBI Energy secures all necessary permitting for an alternate crossing method, a flume or dam-and-pump method or open-cut crossing may be used. With

the flume or dam-and-pump method, temporary construction-related impacts would be limited primarily to short periods of increased turbidity before installation of the pipeline, during the installation of the upstream and downstream dams, and following installation of the pipeline when the dams are pulled and flow is re-established across the restored work area. Following installation of pipelines using dry-ditch crossing methods, stream banks and riparian areas would be re-contoured and stabilized with approved seed mixes. In the event that an open-cut crossing would be used, construction related impacts would be limited primarily to increased turbidity during the crossing and resultant sedimentation. Turbidity increases would be temporary and limited to the duration of construction activities. Sedimentation would occur when the sediments suspended during Project construction resettle. For open-cut crossings, waterbody banks would be stabilized, and temporary sediment barriers would be installed within 24 hours of completing instream construction activities. If WBI Energy utilized an open-cut, flume, or dam-and-pump crossing method, disturbed riparian cover on affected stream banks would be expected to recover over several months to several years. We again reiterate that these crossing methods are not currently proposed by WBI Energy, but are presented for full disclosure of methodologies should a direct bore not be successful. Any alternative to the proposed direct bore would need to be reviewed and approved by the applicable agencies.

Dewatering of the pipeline trenches may require pumping of groundwater in areas where the water table is high. During construction, WBI Energy would discharge water removed from excavations by directing it to upland vegetated land surfaces to control erosion and runoff.

With the implementation of the Plan and Procedures and WBI Energy's proposed construction methods, SPCC Plan, and Guided Bore Plan, we conclude that the Project's impacts on surface water resources would be temporary and minor.

4.3.2.4 Construction and Operational Water Needs

Water use for the Project would primarily consist of hydrostatic testing of the pipe, dust control, and guided bore drilling fluid. WBI Energy stated that municipal water and/or surface waters near the Project area would be used for the Project but has not provided specific sources and or volumes anticipated for each source. Therefore, **we recommend that:**

- **<u>Prior to construction,</u> WBI Energy should file with the Secretary the specific surface water source and volume of water anticipated from each source for hydrostatic testing, dust suppression, and drilling fluid for guided bore operations, for review and written approval by the Director of OEP, or the Director's designee.**

Pursuant to DOT regulations (49 CFR 192), WBI Energy would verify the integrity of the pipeline facilities by conducting hydrostatic testing prior to placing the pipeline into service. This testing involves filling the pipeline with water, pressurizing it, and then checking for pressure losses due to pipeline leakage. WBI Energy estimates the maximum volume of water that would be used for hydrostatic testing would be 2,175,000 gallons. WBI Energy estimates hydrostatic testing of the MDU-Wahpeton Border Station would require 1,160 gallons and the MDU-Kindred Border Station would require 68 gallons. An estimated 1,279,109 gallons of water would be required for drilling fluid. Water used for hydrostatic testing could also be re-used for dust control.

WBI Energy would obtain water for dust control from municipal sources and/or surface water sources. WBI Energy would obtain any required permits or approvals in accordance with state regulations and FERC requirements. Water for dust suppression control was estimated as 0.5 gallons of water per square yard of ground, assuming dry conditions. According to WBI Energy, water for dust control would be necessary in areas where stringing, welding, coating, ditching, and backfilling would be taking place. Based on dry conditions, approximately 240,000 gallons of water would be used at each of the MDU-Kindred and Wahpeton Border Stations. If surface waters are used as a source, WBI Energy would adhere

to North Dakota state requirements to maintain adequate stream flows during water withdrawal. Steam cleaning of equipment is not anticipated to be necessary.

Potential surface waters identified by WBI Energy may contain aquatic nuisance species and, therefore, water withdrawal and discharge would be conducted in accordance with WBI Energy's *Aquatic Nuisance Species Prevention Plan.* Specifically, water withdrawal from a resource that may contain aquatic nuisance species would be discharged to the same waterbody or upland within the same HUC-12 watershed. WBI Energy stated that unspecified disinfection solutions may be used to decontaminate equipment. Hydrostatic test water discharge would be conducted in accordance with the Plan and Procedures as well as applicable North Dakota state laws.

4.3.2.5 Surface Waters Conclusion

Because the waterbody crossings would be completed in accordance with the construction and restoration methods described above, WBI Energy's Procedures, and any site-specific measures that may be required by federal-permitting agencies, we conclude that impacts on waterbodies would be minor and temporary.

4.3.3 Wetlands

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands can be a source of substantial biodiversity and serve a variety of functions that include providing wildlife habitat, recreational opportunities, flood control, and natural improvement of water quality.

4.3.3.1 Existing Wetland Resources

WBI Energy conducted field surveys during 2021 to identify and delineate wetlands within the proposed Project work areas. The surveys examined about 89 percent of the proposed pipeline route, as well as the proposed aboveground facilities, access roads, and contractor yards. Approximately 6.9 miles (11 percent) of the pipeline route and some additional access roads and contractor yards were not examined due to route variations identified after the conclusion of the 2021 field season. National Wetland Inventory data in areas where no survey permission has been granted indicated that no additional wetlands are present in these areas. WBI Energy would confirm this information using field surveys prior to construction. Based on the field surveys and NWI data, the Project would affect 55 wetlands, encompassing a total of 8.51 acres. In total, approximately 4,666 linear feet of wetlands would be crossed by the pipeline centerline. The wetland classifications, milepost locations, crossing lengths, and acreage of wetland that would be affected by construction and operation of the Project are provided in table 4.3.3-1.

TABLE 4.3.3-1

Wetlands Crossed or Otherwise Affected by the Project [a]

Wetland ID	Cowardin Classification	Milepost	Centerline Distance Crossed (feet)	Construction Impact (acres) [b]	Operation Impact [c] (acres)	Proposed Crossing Method
PIPELINE FACILITIES						
wcaa002e	PEM	4.9	54.1	0.01[e]	0.00	Guided Bore
wcaa010e	PEM	5.1	11.6	0.01[e]	0.00	Guided Bore
wcaa011e	PEM	5.2	10.5	0.01[e]	0.00	Guided Bore
wcaa003e	PEM	5.9	32.0	0.04[e]	0.00	Guided Bore

TABLE 4.3.3-1

Wetlands Crossed or Otherwise Affected by the Project [a]

Wetland ID	Cowardin Classification	Milepost	Centerline Distance Crossed (feet)	Construction Impact (acres) [b]	Operation Impact [c] (acres)	Proposed Crossing Method
wcaa004e	PEM	6.0	24.0	0.03[3]	0.00	Guided Bore
wcaa001e	PEM	6.6	14.7	0.03[e]	0.00	Guided Bore
wcaa005e	PEM	8.9	48.4	0.07[e]	0.00	Open Cut
DSK_WL_04	PEM	10.0	88.4	0.14[e]	0.0	Guided Bore
wcaa006e	PEM	10.0	0.0	0.01[e]	0.00	Guided Bore
wcab001e	PEM	13.7	0.0	0.01[e]	0.00	Guided Bore
wcab003e	PEM	13.7	0.0	0.07[e]	0.00	NA[e]
wcab002e	PEM	13.9	0.0	0.01[e]	0.00	NA[e]
wcab004e	PEM	14.7	21.5	0.06[e]	0.00	Guided Bore
wcab005e	PEM	15.7	12.0	0.02[e]	0.00	Guided Bore
wcab008e	PEM	18.8	29.1	0.05[e]	0.00	Guided Bore
DSK_WL_05	PEM	27.6	9.4	0.02[e]	0.00	Guided Bore
wria002e	PEM	28.3	17.2	0.03[e]	0.00	Guided Bore
wria003e	PEM	31.3	11.4	0.05	0.00	Guided Bore
wria004e	PEM	31.4	14.6	0.03	0.0	Guided Bore
wrib001e	PEM	32.1	164.8	0.31	0.00	Open Cut
wrib003e	PEM	32.6	385.6	0.62	0.00	Open Cut
wrib005e	PEM	32.9	88.1	0.13	0.00	Open Cut
wrib006e	PEM	33.2	38.2	0.06	0.00	Open Cut
wrib007e	PEM	33.5	376.9	0.88	0.00	Open Cut
wrib013e	PEM	34.1	103.3	0.21	0.00	Open Cut
wrib014f	PFO	34.2	178.3	0.25	<0.10[c]	Open Cut
wrib014e	PEM	34.3	214.7	0.38	0.00	Open Cut
wrib021e	PEM	34.5	821.3	1.59	0.00	Open Cut
wrib015e	PEM	35.6	14.4	0.03	0.00	Guided Bore
wrib016e	PEM	35.6	22.7	0.04	0.00	Guided Bore
wrib017e	PEM	35.7	368.0	0.68	0.00	Guided Bore
wrib018e	PEM	35.8	245.1	0.36	0.00	Open Cut
wrib020f	PFO	36.0	0.0	0.11	<0.10[e]	Open Cut
wrib020e	PEM	36.0	96.3	0.08	0.00	Open Cut
wrib019e	PEM	36.0	586.2	1.18	0.00	Open Cut
wria006e	PEM	36.3	463.4	0.81	0.00	Open Cut
wria005e	PEM	37.8	12.4	0.02	0.00	Open Cut
wria009e	PEM	42.4	10.8	0.01	0.00	Guided Bore
wria008e	PEM	42.4	15.7	0.03	0.00	Guided Bore
wrid004e	PEM	51.9	23.3	0.04	0.00	Guided Bore
DSK_WL_01	PEM	60.1	21.5	0.09	0.00	Open Cut
DSK_WL_02	PEM	60.2	0.0	0.09	0.00	Open Cut

TABLE 4.3.3-1

Wetlands Crossed or Otherwise Affected by the Project [a]

Wetland ID	Cowardin Classification	Milepost	Centerline Distance Crossed (feet)	Construction Impact (acres) [b]	Operation Impact [c] (acres)	Proposed Crossing Method
	SUBTOTAL			**8.70**	**<0.10**	
ACCESS ROADS						
wcaa009e	PEM	5.1	NA	0.11	0.00	NA
wcaa007e	PEM	9.9	NA	0.02	0.00	NA
wcab003e	PEM	13.7	NA	0.01	0.00	NA
wcab004e	PEM	14.7	NA	0.01	0.00	NA
wria003e	PEM	31.3	NA	<0.01	<0.01	NA
wrib021e	PEM	34.3	NA	0.24	0.00	NA
wria010e	PEM	43.4	NA	<0.01	0.00	NA
wria014e	PEM	44.2	NA	<0.01	0.00	NA
wrid001e	PEM	46.3	NA	<0.01	0.00	NA
wrid003e	PEM	47.3	NA	<0.01	0.00	NA
	SUBTOTAL			**0.42**	**<0.01**	
ABOVEGROUND FACILITIES						
WHAPETON BORDER STATION						
DSK_WL_03	PEM	NA	NA	0.13	0.00	Open Cut
PIPE YARDS						
COMSTOCK YARD						
Wrib026e	PEM	NA	NA	0.04	0.00	NA
KOST YARD						
Wcab010e	PEM	NA	NA	1.65	0.00	NA
	SUBTOTAL			**1.82**	**<0.10**	
	TOTAL			**10.84**	**<0.10**	

[a] The numbers in this table have been rounded for presentation purposes. As a result, the subtotals and totals may not reflect the exact sum of the addends in all cases.

[b] Impacts associated with guided bore consist of an approximately 50-foot-wide travel lane, and no trenching.

[c] All PEM wetlands would be restored to their herbaceous state; therefore, no permanent impacts would occur.

[d] Permanent woody vegetation removal in PFO would occur in the 10-foot wide permanent pipeline easement. The permanent removal of woody vegetation would constitute a wetland conversion of PFO to PEM wetland.

[e] Wetland is within temporary workspace but would not be crossed by the pipeline.

NA = Not applicable

PEM = Palustrine emergent wetland

PFO = Palustrine forested wetland

Cowardin et al. (1979) describes palustrine emergent wetlands by erect, rooted, herbaceous hydrophytes not including mosses and lichens, and states forested wetlands normally possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. Dominant vegetation in the wetlands in the Project area includes narrow-leaved cattail, reed canary grass, prairie cord grass, and needle spikerush. Other hydrophytic vegetation such as foxtail barley, giant ragweed, mild waterpepper, dark

green bulrush, rough barnyard grass, rice cutgrass, and panicled aster were also observed during field surveys.

As shown in table 4.3.3-2, most wetlands crossed by the pipeline are classified as palustrine emergent wetlands. Two wetlands are classified as palustrine forested wetlands, for which the areas cleared for Project construction and maintenance of the operational right-of-way (e.g., the permanent removal of woody vegetation for a 10-foot wide strip centered over the pipe and trees within 15 feet of the pipe) would be converted to palustrine emergent wetland. Surrounding forested wetland habitat not cleared for the Project would remain forested.

TABLE 4.3.3-2

Wetland Types Crossed by the Project [a]

NWI Classification [b]	Approximate Crossing Length (feet) [c]	Acreage Affected During Construction (acres) [d]	Acreage Affected During Operation
PEM	4,452	10.48	<0.01
PFO	178	0.36	<0.10
Project Total	**4,666**	**10.84**	**<0.10**

[a] Wetland crossings are based on WBI Energy's field survey data as of the end of the 2021 field season.
[b] Types listed are those occurring within the 75-foot-wide construction corridor based on Cowardin classifications.
[c] The length of the centerline crossing was calculated from field-delineated or NWI polygons, rounded to the nearest foot, and summed for each type. Values are rounded to the nearest tenth of an acre.
[d] Based on the construction corridor and additional workspace areas associated with the construction corridor.
PEM = Palustrine emergent; may be temporarily, seasonally, or semi-permanently flooded
PFO = Palustrine forested

4.3.3.2 General Impacts and Mitigation on Wetland Resources

Construction of the Project would impact a total of about 10.84 acres of wetlands, consisting of 10.48 acres of emergent wetland and 0.36 acre of forested wetlands. Of the 0.36 acre of forested wetland impacts, 0.1 acre would be within the permanent pipeline easement and would be impacted by operation and maintenance of the pipeline. The Project would have permanent impacts on wetlands, with the conversion of approximately 0.1 acre of palustrine forested wetland to emergent wetland, and the permanent loss of 0.01 acre of palustrine emergent roadside ditch to be filled for a permanent access road. Temporary wetland impacts on approximately 10.47 acres of palustrine emergent wetland and 0.26 acres palustrine forested wetland would be restored after construction.

WBI Energy developed the proposed route with the intention of avoiding wetlands where possible. WBI Energy reduced the footprints at contractor yards to avoid impacts on wetlands. The currently proposed workspace at the Kost Yard avoids two of three wetlands present at that location. According to WBI Energy, the emergent wetland at the Kost Yard is low quality and temporary impacts cannot be avoided.

WBI Energy would construct across or within wetlands in accordance with its Procedures. Construction of the pipeline within wetlands would mostly be limited to a 75-foot-wide corridor. WBI Energy would cross wetlands via the open-cut and guided bore methods as listed in table 4.3.3-1 (see section 2.2.3 for a discussion of each crossing method). WBI Energy would stabilize the working side of the construction right-of-way with timber mats or travel pads, as necessary, to provide a firm surface for construction equipment when working in wetlands. WBI Energy would install silt fence, straw bales, or

other appropriate sedimentation control devices at the edges of the construction right-of-way in areas where spoil may flow into undisturbed areas of wetland to prevent sediment migration. Topsoil over the trenchline would be segregated and stockpiled separately from subsoil (except in areas of standing water or saturated soils). Where the pipeline trench may drain a wetland, WBI Energy would place trench plugs in the trench to maintain the original wetland hydrology. The trench would be backfilled with subsoil and the topsoil would be replaced in accordance with WBI Energy's Procedures. Contours in wetlands would be restored as near as practicable to preconstruction conditions. WBI Energy would implement the measures in its SPCC Plan to prevent a potential inadvertent release of contaminants into wetland soils due to spills.

Following construction, wetlands would be stabilized temporarily with a cover species, such as annual ryegrass if appropriate based on weather conditions and allowed to revegetate naturally with the original seed stock contained in the conserved topsoil. Following restoration, WBI Energy would monitor and report disturbed areas for at least three years to document the success of wetland restoration.

The primary impact of the Project on wetlands would be the alteration of wetland function and value due to vegetation clearing. Construction could also impact water quality within the wetland due to sediment loading or inadvertent spills of fuels or chemicals. The use of heavy equipment within wetlands could also result in the compaction of wetland soils. Impacts on wetlands would be greatest during and immediately following construction. The majority of these effects would be short term in nature, and would cease shortly after the wetlands are restored and vegetated. Following revegetation, the wetland would eventually transition back into a community with functionality similar to that of a preconstruction state. In emergent wetlands, the herbaceous vegetation would regenerate quickly (typically within 1 to 3 years).

Following revegetation, no permanent impact would occur on emergent wetland vegetation in the maintained pipeline right-of-way because these areas naturally consist of, and would remain as, open land and herbaceous communities. Revegetation would be considered successful if the cover of herbaceous species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction, as further discussed below.

The duration of the impact on forested wetlands would be longer than that of emergent wetlands. Permanent impacts on forested wetlands within the new permanent right-of-way would be based on its width, where the wetland would be converted to emergent wetland. For the permanent right-of-way, the re-establishment of mature woody vegetation would be precluded by the annual maintenance of a 10-foot-wide herbaceous strip centered over the pipeline and the cutting of woody vegetation within 15 feet of the pipeline centerline. This would result in a permanent conversion of previously forested wetland areas to emergent wetland areas. The conversion of one vegetation cover type to another could result in changes in wetland functions and values by altering the amount of sunlight or other environmental conditions in the wetland, affecting wildlife habitat. In general, however, it is expected that the affected wetlands would continue to provide important ecological functions such as sediment/toxicant retention, nutrient removal, flood attenuation, groundwater recharge/discharge, and wildlife habitat. Forested wetlands cleared for construction within the right-of-way, but outside of the 15-feet of the centerline, would experience long-term to permanent impacts as it may take several decades for the vegetation to reach maturation. According to WBI Energy, Project impacts on wetlands would be below the threshold requiring compensatory mitigation under the CWA Section 404 permit administrated by the USACE.

The implementation of mitigation measures outlined in the Plan and Procedures would minimize wetland impacts and help ensure the successful restoration of wetland areas. We conclude that short-term wetland impacts would be minimized by WBI Energy's implementation of its mitigation measures and, therefore, impacts on wetlands would not be significant.

4.3.3.3 Wetland Modifications to the FERC Procedures

Section VI.B.1.a of the FERC Procedures requires all ATWS to be located at least 50 feet away from the edge of wetlands, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. WBI Energy has identified 3 areas where ATWS would be required in or within 50 feet of wetlands and ten temporary access roads that would cross low quality, emergent wetlands (modification from section VI.B.1.d) in order to obtain proper access. Appendix I identifies these 13 locations and the justification for the proposed modification to the FERC Procedures. Where exceptions are requested, WBI Energy has indicated that appropriate erosion and sediment controls would be installed, and the wetlands would be restored in accordance with the Procedures following construction. Based on our review, we have determined that WBI Energy has provided adequate justification for the requested ATWS within 50 feet of wetlands and temporary access road across wetlands.

4.3.1.5 Wetland Resources Conclusion

Permanent impacts on wetlands would include the conversion of forested wetlands to emergent wetlands within the maintained permanent pipeline easement (0.1 acre). In addition, long-term to permanent impacts on woody vegetation would result as it may take several decades for the vegetation to reach maturation within the temporary workspace that is cleared for construction. The Project would also permanently impact 0.01 acre of emergent wetlands for a permanent access road. While long-term and permanent effects on wetlands would occur, the small area of impacts and adherence to WBI Energy's Procedures would ensure that impacts are not significant.

4.4 FISHERIES, VEGETATION, WILDLIFE, AND PROTECTED SPECIES

4.4.1 Fisheries and Aquatic Resources

The proposed Project is within the Devils Lake-Sheyenne and Upper Red River watersheds and would cross 10 perennial streams and 9 ephemeral streams (see section 4.3.2, table 4.3.2-2). One perennial waterbody that would be crossed by the proposed Project, the Sheyenne River, is listed as having a North Dakota water quality classification of level 1A, indicating its suitability for the propagation of fish and aquatic life, among other uses. Seven other perennial waterbody crossings, Maple River, Antelope Creek, and five separate crossings of the Wild Rice River are classified as level II, also indicating a capacity to support fish and aquatic life. Two other perennial waterbodies, an unnamed tributary to the Wild Rice River and Pitcairn Creek, have a classification of level III indicating a low value for fish and aquatic biota.

The nine ephemeral waterbodies that would be crossed by the proposed pipeline route include eight ditches and an unnamed tributary to the Maple River. One additional ephemeral waterbody at MP 47.4 would be within the Project's workspace, but would not be crossed by the pipeline trench. Ephemeral streams flow only during or shortly after precipitation events and do not provide habitat to support fisheries or most other aquatic life. Proposed access roads would cross over five additional ephemeral waterbodies.

All waterbodies in the Project area are freshwater with no marine or estuarine waters present. No essential fish habitat occurs within the Project area. The NDGFD stated that there are significant spawning aggregations for both commercial and recreational fisheries in waterbodies or their tributaries that would be crossed by the Project. The Sheyenne, Maple, and Wild Rice Rivers, and Antelope Creek may contain classified fisheries according to the NDGFD. The NDGFD indicated that if the guided bores were unsuccessful at those waterbodies, then in-stream construction activity should not occur between April 15 – June 1, in tandem with proper erosion controls.

The waterbodies that would be crossed by the Project are classified as cool water fisheries with warm water species present. Representative fish species and corresponding fishery classifications are listed

in table 4.4-1. There are no federally listed fish species that are expected to occur within the Project area, but fish species of conservation priority may be in the tributaries and main channels of the Red and Sheyenne Rivers. These species include yellow bullhead, trout-perch, silver chub, and chestnut lamprey (Dyke et al., 2015). All of these species are rare in North Dakota.

TABLE 4.4-1

Representative Fish Species Found in Perennial Waterbodies Crossed by the Project

Species	Classification [a]
Catfish	
Bullhead catfish	Warmwater
Channel catfish	Warmwater
Flathead catfish	Warmwater
Drum	
Freshwater drum	Warmwater
Minnow	
Common carp	Warmwater
Creek chub	Warmwater
Northern pearl dace	Coldwater
Mooneye	
Goldeye	Warmwater
Perch	
Walleye	Cool-warmwater
Yellow perch	Cool-warmwater
Pike	
Northern pike	Coldwater
Muskellunge	Coldwater
Stickleback	
Brook stickleback	Warmwater
Sunfish	
Bluegill	Warmwater
Crappie	Warmwater
Largemouth bass	Warmwater
Smallmouth bass	Warmwater
Sucker	
Bigmouth buffalo	Warmwater
White sucker	Warmwater
Temperate or True Bass	
White bass	Warmwater

Source: FWS, 2021b; USGS, 2021; NDGFD, 2019b; Dyke et al., 2015; Owen et al., 1981.
[a] All of these listed fish species are recreational species in North Dakota.

Freshwater mussels, including black sandshell, creek heelspliter, creeper, mapleleaf, threeridge, pink heelsplitter, and Wabash pigtoe may be within the Sheyenne River. Black sandshell, mapleleaf,

threeridge, pink heelsplitter, and Wabash pigtoe may be within the Red River (NDGFD, 2011; Dyke et al., 2015). No federally listed mussel species are expected to occur within the Project area.

Zebra mussels are an aquatic nuisance species (ANS) of major concern in North Dakota. The NDGFD considers all perennial waterbodies that would be crossed by the Project to be infested with zebra mussels. Of particular concern are the Red and Sheyenne Rivers and their tributaries, as zebra mussels have been previously documented in these waterbodies. WBI Energy stated that it may use unspecified disinfection solutions to decontaminate equipment infested with ANS. The NDGFD also indicated that WBI Energy should provide the agency with a reasonable opportunity to inspect equipment for ANS prior to deployment into waterbodies.

4.4.1.1 Construction and Operation Impacts and Mitigation Measures

All 10 of the perennial waterbodies that would be crossed by the Project would be crossed by the trenchless guided bore method per request of NDGFD. Successful completion of the guided bores would generally prevent impacts on aquatic species by avoiding disturbance of the waterbody beds and banks, and impacts on water quality such as turbidity and suspended solids. WBI Energy indicated that based on the geology and soils that would be encountered by the bores, the bores would be feasible and can be completed successfully. The NDGFD stated that there would not be adverse effects on fisheries if guided bore crossings and erosion controls are implemented. The NDGFD also requested that precautions such as equipment inspection by the department should be taken to prevent the introduction of ANS. The measures that WBI Energy specified in the Guided Bore Plan and the measures outlined in the *Aquatic Nuisance Species Prevention Plan*[11] would be followed to minimize construction impacts in and nearby waterbodies. The *Aquatic Nuisance Species Prevention Plan* includes the following mitigation measures:

- cleaning, draining, and drying of equipment prior to arrival at the Project site, between usage in different perennial waterbodies, or before moving to a different HUC-12 watershed;
- allowing the NDGFD to inspect equipment prior to entering perennial waterbodies infested with zebra mussels;
- surface water withdrawn from infested waterbodies would be discharged back into the original source, or to upland areas within the same HUC-12 watershed; and
- decontamination of equipment where ANS are observed with inspection by the EI including washing with 140°F water, use of a disinfection solution, and proper disposal of waste.

This includes mixing infested drilling mud and or discharge waters with subsoil, but leaving the topsoil free of contaminants.

Guided bore drilling could impact aquatic resources if fuel, drilling fluids, or mechanical fluids are inadvertently released. The EPA and NDDEQ commented that WBI Energy should have proper spill response measures in place. The measures specified in WBI Energy's SPCC Plan would be implemented to protect surface waters. To reduce the likelihood of an accidental spill, hazardous materials would not be stored within 100 feet of stream banks. If refueling is required within the 100-foot buffer, an EI would supervise the work. In case of an accidental spill, the relevant regulatory agencies would be notified, and actions would be taken to contain and remediate the area as detailed in section 6.2 of the SPCC Plan.

WBI Energy stated that if the guided bore crossings were unsuccessful, then the open-cut crossing method could be utilized as an alternative method; however, these methodologies are not currently

[11] See WBI Energy's filing accession number 20220726-5028, Resource Report 3, updated appendix 3B.

proposed, but disclosed here for informational purposes. Open-cut crossings of waterbodies involve trenching with flow present and would cause increased sedimentation and turbidity if waterbodies are flowing. Perennial waterbodies would be flowing, but the ephemeral streams may be dry during construction. The flume or dam-and-pump dry crossing methods are other alternative methods that could be used if guided bores were unsuccessful. Flume and dam-and-pump crossings would have less impacts on aquatic habitat and water quality than the open-cut method as the crossing would be performed under dry conditions, but the waterbody banks and bed would still be disturbed with sediment and turbidity occurring as water is reintroduced to the stream following backfill of the trench. WBI Energy would be required to seek approval from FERC and other applicable agencies prior to modifying the crossing method from a guided bore to an alternative method.

To minimize potential impacts, temporary erosion and sedimentation controls, which were noted by the EPA and NDDEQ in their comments, would be installed in accordance with WBI Energy's Procedures for the proposed direct bore crossings, and in the event open-cut, flume, or dam-and-pump crossing alternative methods are used (only if approved by all agencies in the event of a direct bore failure). Upon completion, streambeds and banks would be restored to preconstruction conditions and revegetated with seed mixes in accordance with the Procedures. If flowing water with fish are present during construction, it is likely that the fish would temporarily relocate upstream or downstream to avoid the turbid waters (Reid and Anderson, 2013); however, some limited mortality could result. Benthic invertebrates including mussels with limited or no mobility may experience direct mortality due to habitat disturbance and direct crushing by equipment (Kraft, 1981; Tsui and McCart, 1981; Schubert et al., 1987; Anderson et al., 1998). Overall, the effects of the direct bore, and if needed as an alternative, the open-cut, flume, or dam-and-pump crossing methods, would be expected to be localized, short-term, and not significantly impact fish populations.

Water withdrawals for hydrostatic testing or dust control can cause entrainment of fish and other aquatic organisms (Gray, et al., 1986). WBI Energy would use intake screens to prevent the entrainment of fish during water withdrawal. Screens would be sized to exclude fingerlings and small fish. As noted above, surface water withdrawn from waterbodies infested with ANS would be discharged back into the original source, or to upland areas within the same HUC-12 watershed to prevent or minimize the spread of ANS.

The effects of the Project on aquatic life would be expected to be avoided with the use of successful guided bores. Impacts on riparian areas for preparing paths to water or for laying guided bore guide wires could affect aquatic habitat through sedimentation or turbidity in surface waters, but these effects would be minor and effectively prevented or minimized with implementation of WBI Energy's Procedures. Effects would be minor, localized, and short-term if alternative crossing methods were used or an inadvertent return were to occur. No long-term or population-level impacts would be expected on fisheries or aquatic organisms. Effects on water temperature, dissolved oxygen, pH, benthic invertebrate, and fish communities would be expected to be short-term, and revert to preconstruction conditions after construction is completed for the alternative crossing methods.

4.4.2 Vegetation

The Project would cross the Red River Valley physiographic region. Vegetation types in the Project area consist of agricultural land, open land/non-native grassland, and small amounts of forested land. The majority of the Project area consists of grain and row crops including canola, soybeans, corn, sugar beets, and sunflowers. Pastures and hayfields also are included in agricultural lands. Open land includes grassland and shrubland. Non-native grassland species include smooth broome, Kentucky bluegrass, reed canary grass, and Canada thistle.

Forested land in the Project area is primarily small stands and strips of deciduous trees along wetland, riparian, and agricultural areas including green ash black willow, boxelder, and eastern cottonwood. The EPA commented that potential impacts on wetlands and riparian areas should be considered. The NDGFD requested that WBI Energy avoid removal of woody vegetation to the extent possible. Forested areas that would be crossed by the Project are identified in table 4.4-2. Forested wetlands are discussed in section 4.3.3.

TABLE 4.4-2

Forested Areas Crossed by the Project Area

Forested Land/County	Land Designation	MP		Feet Crossed
		Entry	Exit	
Cass				
	Mixed Forest	24.1	24.1	167
	Mixed Forest	24.1	24.1	83
Richland				
	Forested Wetland (Surveyed)	34.2	34.3	178
	Mixed Forest	36.8	36.8	111
	Deciduous Forest	41.3	41.3	99
	Woody Wetlands	50.8	50.8	108
	Woody Wetlands[a]	50.9	50.9	232
	Deciduous Forest	50.9	50.9	98
	Woody Wetlands	51.1	51.1	232
	Woody Wetlands	51.1	51.2	97
	Woody Wetlands	51.2	51.3	580
	Woody Wetlands	51.3	51.4	323
	Deciduous Forest	57.0	57.0	55
	Mixed Forest	57.0	57.0	200
	Deciduous Forest	57.6	57.6	98

Source: Dewitz, 2021

[a] Woody wetlands contain scrub-shrub vegetation, which may include woody vegetation less than 20 feet tall.

4.4.2.1 Sensitive Vegetation Communities

The Project would not cross any federally or state-designated sensitive vegetation communities or locations of rare plants based on a query of the NDPRD's Natural Heritage Program. Two recognized mesic tallgrass prairie communities (pipeline at MP 34.5 and access road at MP 34.7) and a sand mixed grass prairie community (access road at MP 34.5) would be within 0.1 mile of the Project, but would not be crossed.

4.4.2.2 Noxious and Invasive Plants

Noxious and invasive plants can cause direct harm to vegetation communities. Noxious weeds are "injurious to public health, crops, livestock, land, or other property" (North Dakota Century Code 4.1-47-01). Invasive plants are non-native species that typically dominate and out-compete native plants, reducing species diversity. Noxious and invasive species can be spread during construction activities as they can establish rapidly in disturbed areas and may be transported on construction vehicles (Barlow et al., 2017).

WBI Energy conducted surveys for noxious weed species within a 300-foot-wide corridor along the Project grassland areas. Numerous noxious or invasive plant species may occur in the Project area, but only Canada thistle was observed. Canada thistle was observed in 27 locations between MPs 24.2 and 43.5 along the proposed pipeline route and at one location in the Kindred Contractor Yard. Canada thistle comprised a majority of the vegetation present at only one location, at MP 33.5.

Construction and Operation Impacts and Mitigation Measures

Construction of the Project would affect 728.2 acres of agricultural land, 12.1 acres of non-native grassland, and 1.7 acres of forested land (table 4.4-3). Disturbed areas would be revegetated with seed mixes recommended by the NRCS or landowners and restored. The Project would permanently encumber about 351.1 acres of agricultural land, 5.7 acres of non-native grassland, and would impact 1.1 acres of forested land.

TABLE 4.4-3

Vegetation Types Affected by Construction and Operation of the Project (acres)[a,b]

Facility Workspace	Agricultural Land[c]		Open Land (Non-Native Grassland)[d]		Forested Land[e]		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline Facilities								
Wahpeton Expansion Pipeline	517.1	346.0	8.5	5.7	1.1	1.1	526.7	352.8
Subtotal	**517.1**	**346.0**	**8.5**	**5.7**	**1.1**	**1.1**	**526.7**	**352.8**
ATWS	113.0	0.0	1.4	0.0	0.1	0.0	114.5	0.0
Subtotal	**113.0**	**0.0**	**1.4**	**0.0**	**0.1**	**0.0**	**114.5**	**0.0**
Aboveground Facilities								
MDU—Kindred Border Station	1.7	1.7	0.0	0.0	0.0	0.0	1.7	1.7
MD—Wahpeton Border Station	1.7	1.7	0.0	0.0	0.0	0.0	1.7	1.7
Mapleton Compressor Station	2.8	0.0	0.0	0.0	0.0	0.0	2.8	0.0
Subtotal	**6.2**	**3.4**	**0.0**	**0.0**	**0.0**	**0.0**	**6.2**	**3.4**
Contractor Yards								
Kost Yard	19.1	0.0	1.6	0.0	0.0	0.0	20.7	0.0
Kindred Yard	3.5	0.0	0.3	0.0	0.0	0.0	4.0	0.0
Comstock North Yard	20.7	0.0	0.0	0.0	0.0	0.0	20.7	0.0
Comstock South Yard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wahpeton City Yard	28.1	0.0	0.0	0.0	0.0	0.0	28.1	0.0

TABLE 4.4-3

Vegetation Types Affected by Construction and Operation of the Project (acres)[a,b]

		Agricultural Land[c]		Open Land (Non-Native Grassland)[d]		Forested Land[e]		Total	
	Subtotal	**71.4**	**0.0**	**1.9**	**0.0**	**0.2**	**0.0**	**73.5**	**0.0**
Access Roads									
Access Roads		18.3	1.3	0.3	0.0	0.3	0.0	18.9	1.3
	Subtotal	**18.3**	**1.3**	**0.3**	**0.0**	**0.3**	**0.0**	**18.9**	**1.3**
Block Valve Site		0.7	0.1	0.0	0.0	0.0	0.0	0.7	0.1
Block Valve 2		0.4	0.1	0.0	0.0	0.0	0.0	0.4	0.1
Block Valve 4		0.7	0.1	0.0	0.0	0.0	0.0	0.7	0.1
Block Valve 5		0.4	0.1	0.0	0.0	0.0	0.0	0.4	0.1
Block Valve 5		0.7	0.1	0.0	0.0	0.0	0.0	0.7	0.1
	Subtotal	**2.2**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**2.2**	**0.4**
Project Total		**728.2**	**351.1**	**12.1**	**5.7**	**1.7**	**1.1**	**742.0**	**357.9**

a The subtotals and totals in this table may not reflect the sum of the addends due to rounding.

b This table does not include vegetation types for developed land or open water as there is no vegetation within these areas.

c Includes cultivated crops, hayfields, and pastureland.

d Includes herbaceous land, scrub/shrub.

e Includes deciduous and mixed forestland (hedgerows, upland wooded areas, and deciduous forests). Note 0.2 acre of forest (of the 1.7 acres reported) actually would be avoided at the Kindred Contractor Yard per clarification made by WBI Energy – see accession number 20220726-5028, RR3-4.

f Block valve setting 1 would be constructed and operated within the Mapleton Compressor Station site. Block Valve Settings 3 and 7 would be constructed and operated within the construction and operational footprints of the MDU—Kindred Border Station and the MDU—Wahpeton Border Station. The construction and operational acreages for these block valve settings are included within the acreages for the Mapleton Compressor Station, the MDU—Kindred Border Station, and the MDU—Wahpeton Border Station. A pig launcher/receiver would be collocated at Block Valve Sites 1, 2, 5, and 7.

Const. = construction; Oper. = operation

Construction of the pipeline would require clearing vegetation and grading of the right-of-way. Upon the completion of construction, reseeding would follow the timelines identified in the Plan or recommended by the NRCS or Farm Service Agency and with landowner approval to reduce the effects of erosion. Areas farmed with row crops may not be seeded per landowner request and would simply revert to crops planted by the farmer with the next growing season. Following revegetation, agricultural and open land both in the temporary and permanent right-of-way, would revert to general preconstruction condition within one to two years.

Forested lands would incur a larger degree of impact. Forested areas within the temporary right-of-way would take between 30-70 years to return to preconstruction conditions (Hilmers et al., 2018). Wooded areas within the permanent right-of-way would be periodically mowed or cleared, about once every three years, to maintain a permanent herbaceous state. Additionally, a 10-foot-wide area directly above the pipeline may be mowed annually.

In order to reduce the impact of the Project on forested areas, WBI Energy's proposed routing avoids wooded areas to a large degree. Guided bore crossing would protect riparian vegetation by reducing the amount of tree clearing needed, and permanent access roads would avoid most forested areas to allow a larger amount of wooded land to be restored. Further, approximately 51 percent of the proposed Project route would be collocated with existing corridors, thereby reducing impacts on fragmentation of interior forest habitat. Since the majority of the Project area would be on agricultural and open lands, vegetation maintenance should be infrequent. WBI Energy may clear vegetation, including forest or riparian vegetation, for installation of equipment bridges or pathways to access water for the guided bores or hydrostatic testing, and this has been accounted for in the acreage impact calculations. WBI Energy would attempt to collocate those pathways for access to water with corridors for guided bore guide wires to minimize disturbance. Sensitive vegetation communities would not be affected by the Project.

WBI Energy would implement its *Noxious Weeds Management Plan* to control invasive plants during construction and operation of the Project. Prior to construction, areas that were or are identified as containing noxious weeds would be marked in the field and marked on alignment sheets to notify construction personnel to implement weed control measures. Pre-treatment of noxious weeds may be conducted if deemed beneficial in reducing spread. Additionally, all contractor equipment would be cleaned before arriving at the site, and all erosion control materials utilized would be weed-free. If noxious species are able to establish despite these control measures, WBI Energy would implement additional weed control measures such as herbicides (along with associated surfactants and additives) and mechanical removal. WBI Energy stated that herbicides would be used by licensed individuals per applicable requirements, product instructions, and manufacturer's guidance.

In conclusion, construction and operation of the Project would result in minor short- and long-term impacts on vegetation. Additionally, with implementation of restorations outlined in WBI Energy's Plan and Procedures and the *Noxious Weeds Management Plan,* we conclude that impacts on vegetation would not be significant.

4.4.3 Wildlife

4.4.3.1 General Wildlife Resources and Habitat

Vegetation type is an important component of wildlife habitat and often determines wildlife species distribution. We use the vegetation community types described in section 4.7, along with open water, to describe wildlife habitat within the Project area. Some wildlife species may also use developed lands. The Project area is primarily comprised of agricultural lands, followed by developed land, open water, open land/non-native grassland, and forested land. The diversity of the types of resources in each vegetation class influences the wildlife communities that are prevalent. A list of representative wildlife species by habitat type is provided in table 4.4-4.

TABLE 4.4.-4

Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands / Non-native Grassland	Forested Land	Developed Lands	Open Water
Mammals					
American Badger		X			
Coyote	X	X		X	
Deer mouse)		X			
Eastern cottontail		X			

TABLE 4.4.-4

Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands / Non-native Grassland	Forested Land	Developed Lands	Open Water
Eastern fox squirrel		X	X	X	
Meadow vole		X			
Mink		X			
Muskrat		X			
Raccoon	X	X	X	X	X
Red fox		X	X		
Striped skunk	X	X			
White-footed mouse		X			
White-tailed deer	X	X	X	X	
White-tailed jackrabbit	X	X			
Birds					
American crow	X	X		X	
American kestrel	X	X			
Bald eagle		X			X
Blue-winged teal		X			X
Brown-headed cowbird	X	X			
Clay-colored sparrow		X			
Eastern kingbird	X	X			
Henslow's sparrow		X			
Killdeer	X	X			
Mallard	X	X			X
Mourning dove	X	X		X	
Northern harrier	X	X			
Red-tailed hawk	X	X			
Ring-necked pheasant	X	X			
Savannah sparrow		X			
Sharp-tailed grouse		X			
Western kingbird		X			
Reptiles and Amphibians					
American toad		X			
Boreal chorus frog		X			
Common garter snake		X			
Great Plains toad		X			
Northern leopard frog		X			
Plains garter snake		X			
Red-bellied snake		X			
Tiger salamander		X			
Western painted turtle		X			

Source: NDGFD, 2015; 2018; 2019a; 2019d.

The large majority of the Project acreage (about 92 percent) would be in agricultural land. Cultivated cropland provides poor quality wildlife habitat leading to low wildlife diversity (Burger, 1978). Opportunistic species such as white-tailed deer, ring-necked pheasant, and migrating waterfowl may use the croplands for a food source, but the lack of suitable nesting, roosting, and/or cover limits the value of this habitat type.

Developed land, consisting of industrial, commercial, residential areas, along with roads, railroads, and utility corridors, is the next most prevalent habitat type and encompasses approximately 5 percent of the Project area. Developed areas exhibit high levels of disturbance from their native condition. Developed areas have poor quality habitat which is only suitable for some opportunistic species including squirrels, mice, skunks, raccoons, and mourning doves, and has an overall low species diversity (DeStefano and DeGraaf, 2003).

Approximately 2 percent of the proposed Project area is classified as open water. Numerous aquatic species, waterfowl, mammals, reptiles, and amphibians utilize this habitat. Additionally, many species have adapted to live on the edges of open water utilizing this habitat for food and cover (Odum, 1979). Aquatic habitats exhibit unique characteristics compared to other habitat types and host a variety of organisms that are specifically adapted and dependent upon this habitat for survival. Surface water resources are described further in section 4.3.2, and fisheries and aquatic resources are discussed in section 4.4.1.

About 1 percent of the proposed Project area is comprised of open land. Open areas include grassland, shrubland, and emergent wetlands and provide an abundance of cover, food sources, and breeding areas for wildlife. Prairies and wet meadows are also encompassed in this category. Open land is used by a variety of mammals, reptiles, amphibians, and birds including several mice, snake, frog, toad, raptor, and songbird species. Several game animals utilize this habitat as well including white-tailed deer, ring-necked pheasants, and white-tailed jackrabbits. Wetlands support a diversity of amphibian species as well as some small mammals. Several wildlife species have become uniquely adapted to this type of habitat (Gibbs, 1993). The NDGFD stated that with proper measures for restoration to pre-project conditions and mitigation of any degraded areas, there would not be significant adverse effects on wetland habitats.

Less than 1 percent of the Project area consists of forested lands. Forested lands support a large diversity of wildlife species with a variety of food, cover, and rearing areas. Several birds and mammals occupy this habitat, with representative species including white-tailed deer, red foxes, eastern fox squirrels, raccoons, and bats. The NDGFD stated that removal of woody vegetation should be minimized to the extent possible.

No federal- or state-designated wildlife management areas would be crossed by the Project. A FWS Waterfowl Production Area (WPA) easement, part of the Tewaukon Wetland Management District, is within 0.1 mile of the proposed Project area (west of MP 35), but would not be crossed (FWS, 2019b). WPAs, which were noted by the FWS in its comments, protect habitat that supports waterfowl, shorebirds, grassland birds, as well as the associated plants, insects, and wildlife. Several significant ecological communities would be adjacent to, but not crossed by the Project as indicated by a North Dakota Natural Heritage biological conservation database query. The NDGFD indicated no significant concerns for sensitive prairie ecological communities along the proposed Project route.

Construction and Operation Impacts and Mitigation Measures

Potential impacts on wildlife could occur due to clearing, grading, and noise. Clearing of the right-of-way and workspaces would reduce vegetation cover and temporarily decrease the amount of foraging, nesting, and cover habitat that is available until vegetation is reestablished. Less mobile species, such as small mammals, reptiles, or amphibians, may experience direct mortality from clearing and grading if they are unable to relocate outside of the Project area (Northrup and Wittemyer, 2013). Mobile animals may relocate outside of the Project area in response to the temporary loss in habitat as well as the increased noise

and human presence associated with construction activities. While most displacement would be temporary and limited to the construction duration, abandonment of nests and burrows could result in mortality for some species.

Agricultural and developed lands are already highly disturbed and do not support diverse vegetation communities or high value wildlife habitat. As such, wildlife habitat would be minimally affected in agricultural and developed lands (Alho, 2008). The Project's impacts also would be expected to be minimal for open land and forested land, as less than 3 percent of the Project area consists of these habitat types. Most areas would experience only a temporary reduction in vegetation cover after areas are revegetated. The small amount of forested habitat would experience long-term impacts in the temporary workspaces until trees regrow and permanent modification to a herbaceous condition within the permanent easement. Open water habitats would be crossed by trenchless guided bore methods, resulting in no impacts on habitat with successful boring.

Waterfowl and bird habitats may be affected by the construction noise and lead to temporary displacement from suitable habitat. This can lead to reduced productivity from nest abandonment if construction occurs during the nesting season (Sutter et al., 2016). The largest extent and duration of construction noise near the WPA would occur initial clearing and grading, with some additional equipment noise during subsequent construction phases. Noise duration would be expected to be intermittent and brief (i.e., several days) during the various stages of standard pipeline construction. WBI Energy would utilize a guided bore at 62nd Street SE at MP 35.6 near the WPA, but the bore activity is estimated to have a duration of 12 hours per day for only 2 to 3 days, with only minimal noise impacts.

Trenching can also pose a hazard to wildlife. Excavated trenches can trap wildlife that enter overnight (Woinarski et al., 2000). In order to minimize the likelihood that wildlife may be trapped, the length of the excavated pipeline left open overnight would be minimized. Windrowed soils and materials staged on the right-of-way would contain breaks to facilitate wildlife movement and passage. Additionally, escape ramps would be installed at regular intervals along the trench. Temporary fencing would be installed around the right-of-way if cattle are present, which could also act to protect large wildlife species such as deer. Trenches would be examined every morning before construction is initiated to ensure there are no trapped wildlife present. Any trapped wildlife would be allowed to leave on its own, and if wildlife remain trapped then the NDGFD or FWS would be notified to provide assistance.

The 50-foot-wide permanent easement would be mowed or cleared to maintain accessibility of the right-of-way for routine maintenance no more than once every 3 years, except for as needed maintenance of a 10-foot-wide corridor centered over the pipeline to facilitate corrosion/leak surveys. Agricultural areas would be restored for continued agricultural use. The permanent easement would be maintained in an herbaceous state. The greatest impact would be in formerly forested areas, as the area would be routinely mowed or maintained in an herbaceous condition. This would result in a permanent reduction in feeding, nesting, and cover for forested species. As forested areas comprise a small percentage of the Project area, these permanent impacts would be small in scale. Additionally, these forested areas do not contain large blocks of contiguous forest, which generally exhibit the greatest impact on species when clearings are introduced into these tracts, leading to forest fragmentation. WBI Energy routed the Project to maximize collocation with existing corridors and to avoid forested areas as much as possible, and proposes numerous guided bores to avoid forest and riparian habitat.

Construction and operation of the proposed aboveground facilities would have minimal capacity to affect wildlife and habitat. Only agricultural and developed land, which support a low diversity of species, would be affected by aboveground facilities. Any residing wildlife would be able to relocate to adjacent areas with suitable habitats. As the affected habitat would be low quality and mainly supports animal species accustomed to living around human activity, impacts on wildlife are expected to be minimal.

In conclusion, construction and operation of the Project would result in minor short- and long-term impacts on wildlife. Additionally, with implementation of restoration measures outlined in WBI Energy's Plan and Procedures, we conclude that impacts on wildlife would not be significant.

4.4.3.2 Migratory Birds

Migratory birds are protected under the MBTA, 16 U.S.C. 703-712. Executive Order (EO) 13186 (66 Federal Register 3853) 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. The MBTA generally prohibits the taking of any migratory bird, or a part, nest, or eggs. EO 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population-level impacts.

On March 30, 2011, the FWS and the Commission entered into a Memorandum of Understanding that focuses on avoiding or minimizing adverse effects on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies. This voluntary Memorandum of Understanding does not waive legal requirements under the MBTA, BGEPA, ESA, NGA, Federal Power Act, or any other statutes and does not authorize the take of migratory birds. Conservation of migratory bird habitats, avoiding or minimizing take, and development of effective mitigation measures are main elements in the Memorandum of Understanding, with an emphasis on birds of conservation concern (BCC). The FWS published a final rule on October 4, 2021, revoking the January 7, 2021 regulation that restricted the scope of the MBTA. The final rule went into effect in December 2021 and the FWS resumed interpretation of the MBTA as prohibiting incidental take and instituting enforcement mechanisms (FWS, 2021d).

Birds of Conservation Concern are a subset of protected birds under the MBTA and include all species, subspecies, and populations of migratory nongame birds that are likely to become candidates for listing under the ESA without additional conservation actions. Bird Conservation Regions (BCR) are regions designated by the FWS that share similar BCC and habitats. The Project facilities would be within the Prairie Potholes BCR. Fourteen designated BCC bird species may occur in the Project area (table 4.4-5) (FWS, 2022b; Bird Studies Canada and North American Bird Conservation Initiative, 2022; North American Bird Conservation Initiative, 2021; FWS, 2022b).

TABLE 4.4.-5

Birds of Conservation Concern that May Occur in the Project Area [a]

Species	Habitat Association	Peak Nesting Bird Season in North Dakota
American golden-plover [b]	Utilize a variety of habitats during migration including burned, plowed, and harvested agricultural fields, pasturelands, sod farms, estuaries, mudflats, and prairie.	NA—Migrant Species
Bald eagle [c, d, e]	Typically breeds in forested areas adjacent to large bodies of water. Nests in trees and will occasionally nest on cliff faces and ground nest in treeless areas. Stopover habitat during migration includes roosting sites with deciduous trees that are in or near riparian areas, protected from human disturbance, and in proximity to foraging habitat.	Early March to July
Black tern	Shallow freshwater marshes with emergent vegetation, which includes prairie sloughs, margins of lakes, and river or island edges.	Early June to mid-July

TABLE 4.4.-5

Birds of Conservation Concern that May Occur in the Project Area [a]

Species	Habitat Association	Peak Nesting Bird Season in North Dakota
Black-billed cuckoo	Found within brushy margins or woodland openings, thickets of small trees, and prairie shrubs. Can also be found utilizing riparian areas, shelterbelts, and wooded areas of towns and farmsteads.	Mid-June to late July
Bobolink	Fields comprised of mixed grasses and broad-leaved forbs (e.g., red clover and dandelion).	Early June to mid-July
Franklin's gull	Habitat within breeding range includes freshwater marshes nesting over water, on floating mats built on water's surface, muskrat houses, or floating debris.	Late May to Mid-July
Golden eagle [b, d]	Primary habitat includes rugged portions of badlands, buttes overlooking native prairie, large trees, and frequently associated with prairie dog colonies.	NA—Migrant Species
Hudsonian godwit [b]	Utilize marshes, shallow marshy lakes, flooded pastures, prairie pools, and mudflats.	NA—Migrant Species
Lesser yellowlegs [b]	Utilizes a variety of habitats during migration including fresh marshes and edges of lakes and ponds.	NA—Migrant Species
Marbled godwit	Associated with a variety of wetlands and nests frequently on grazed native prairie.	Early May to late June
Red-headed woodpecker	Typical habitat includes open forests with clear understories, open pine plantations, and tree rows in agricultural areas.	Early June to early August
Ruddy turnstone [b]	Habitat during migration includes mudflats and shorelines of freshwater lakes.	NA—Migrant Species
Short-billed dowitcher [b]	Utilize a variety of habitats during migration including manmade environments such as impoundments, sewage ponds, and flooded farm fields. Additional habitats include muddy margins of rivers, lakes, and bays.	NA—Migrant Species
Willet	Breeds in prairies comprised of short, sparse cover near wetlands and grasslands.	Late May to mid-July

Sources: FWS, 2021a, 2022; Bird Studies Canada and North American Bird Conservation Initiative, 2022; Cornell Lab of Ornithology, 2022; NDGFD, 2016, 2019a, 2019d.

[a] BCR region 11, Prairie Potholes, would overlap the Project facilities.

[b] Non-breeding within North Dakota.

[c] Not identified as a BCC bird, but identified within the FWS Information for Planning and Consultation System as a Non-BCC Vulnerable species that could be found within the Project area.

[d] ESA delisted species.

[e] Protected under the BGEPA.

NA = not applicable

Additionally, the Project would be within the Central Flyway (FWS, 2021c; Dubovsky, 2020). The Central Flyway is a major migratory route for waterfowl between the Gulf of Mexico and central Canada that is used during spring and fall migrations for several species, including ducks, geese, doves, pigeons, sandhill and whooping cranes, and tundra swans (Dubovsky, 2020). These species typically use wetland and open areas. Additionally, the large swaths of agricultural, developed, and open land may be used by nesting or feeding migratory bird species.

Impacts on migratory birds could be direct or indirect. Habitat impacts can occur from temporary disturbance to vegetation and habitat, habitat fragmentation, displacement, and noise. Nests would be particularly susceptible during the spring or summer nesting season (Panta-Corzo et al., 2013), when construction is projected to start or be ongoing. In order to mitigate concerns for nesting birds, WBI Energy would conduct ground-based surveys for bird nests within 7 days prior to ground disturbance, and repeat the surveys as needed in the event of delays in the initiation of Project work. If nests are identified during surveys, a 0.1-mile buffer would be set up around the nest and construction would not be permitted to proceed in this area until the nest becomes inactive or the chicks have fledged. If vegetation clearing has occurred, but construction does not begin immediately resulting in overlap with the nesting season, then WBI Energy would maintain the area to prevent vegetation re-growth and re-establishment of habitat. Most construction activities resulting in noise, including guided bores, would be limited to daytime hours, and activity would be intermittent and temporary. Further, WBI Energy maximized collocation of the proposed pipeline route with existing corridors to the extent possible, therefore we anticipate that migratory birds in many areas would already be habituated to human-caused noise. Since most construction activities would occur during daytime, no significant impacts resulting from artificial lighting would be anticipated.

After construction and restoration to the preconstruction condition to as near as practical are completed, vegetation maintenance of the permanent right-of-way would take place outside of nesting bird season (April 15 to August 1) to avoid continued impacts on these species. Vegetation maintenance would not occur more than once every three years, except to maintain a 10-foot-wide corridor directly over the pipeline in uplands, which may occur annually. Selective cutting of woody vegetation within 15 feet of the pipeline would be allowed in wetlands. WBI Energy stated that it anticipates that the need for vegetation maintenance would be limited, with infrequent maintenance most likely performed at pipeline markers and road crossings. Based on the agricultural nature of the majority of the Project, the use of appropriate seed mixes, the minimal amount of forest impacts, and implementation of the mitigation efforts described above, there would not be a significant impact of the Project on migratory birds.

Bald and golden eagles have additional protection under the BGEPA as noted by FWS in its comments. The BGEPA prohibits take, disturbance, and other harm to bald and golden eagles. No nesting habitat for golden eagles would be crossed by the Project (NDGFD, 2022a) and no impacts on golden eagles are anticipated. Bald eagles can be both residents and migratory in North Dakota. Bald eagles prefer mature stands of trees near a water source, but have been documented using atypical habitats such as agricultural shelterbelts (Johnson, 2009). Five previously known bald eagle nests would be within 2 miles of the proposed Project (approximately 0.8 mile from the Kost Contractor Yard; two locations 1.4 and 1.7 miles from MP 25.7; 1.9 miles from MP 38; and 1.7 miles from MP 59.7). WBI Energy's ground-based surveys did not result in observation of eagle nests.

WBI Energy would implement the FWS's National Bald Eagle Management Guidelines to prevent or limit impacts on bald eagles. The main applicable guideline would be establishment of a 0.5-mile construction buffer around any active eagle nests that are discovered during the surveys. Other guidelines include avoiding tree clearing within 330 feet of known nests (660 feet during breeding season), minimizing disruptive construction activities between nests and foraging areas, and prohibition of the use of explosives within one mile (in open areas) of active roosts. The NDGFD commented that there would not be adverse effects on raptors if appropriate surveys are conducted and recommended that surveys be completed prior to leaf out. WBI Energy stated that visibility would still be adequate after leaf out since the forested areas are limited along the Project route. We find these measures adequate.

Given the small amount of suitable habitat, WBI Energy's mitigation measures, we conclude that impacts on bald and golden eagles would not be significant.

4.4.4 Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category for this EIS are federally listed species that are protected under the ESA, those designated as a candidate for federal listing, and species that are state endangered, threatened, or have another special state designation.

Federal agencies are required under section 7 of the ESA to ensure that any actions authorized, funded, or carried out by the agency would not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. As the lead federal agency authorizing the Project, FERC is required to consult with the FWS to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the Project, and to evaluate the proposed action's potential effects on those species and/or critical habitats.

For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the lead federal agency must report its findings to the FWS in a Biological Assessment. If it is determined that the action is likely to adversely affect a listed species, the federal agency must submit a request for formal consultation to comply with section 7 of the ESA. In response, the FWS would issue a Biological Opinion (BO) as to whether the federal action would jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Based on consultation with the FWS, the Project would have *no effect* on one federally listed species and *may affect, but would not adversely affect* three federally listed species. As discussed below, we have received concurrence from the FWS for the species under its jurisdiction. Thus, section 7 consultation is complete for the Project, with the exception of any required consultation for the Wild Rice River Route Alternative - MP 55, which we have recommended.

As our non-federal designee and for the purpose of complying with section 7(a)(2) of the ESA, WBI Energy initiated informal consultation with the North Dakota Field Office of the FWS on September 13, 2021, continuing with WBI Energy providing additional correspondence and information to FWS on January 9 and 13, 2022, and May 27, 2022, respectively, regarding federally listed threatened or endangered species potentially occurring in or near the general area of the Projects.

The FWS identified four federally listed species (northern long-eared bat [NLEB], western prairie fringed orchid [WPFO], and two butterfly species--Dakota skipper [DASK] and Poweshiek skipperling), and one candidate species (monarch butterfly), which fall under its jurisdiction in the Project area. These species, their protection status, and their potential habitat in the Project area are summarized in table 4.4-6 and discussed further below. Although critical habitat for the Dakota skipper and Poweshiek skipperling is in the State of North Dakota, it is not present in the areas impacted by the Project, and therefore, the project would have *no effect* on critical habitat for any species.

TABLE 4.4-6

Federally Listed Species in the Project Area

Species	Federal Status	Habitat/Life History
Mammals Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Rare in North Dakota. Primarily found in woodland habitats. A significant loss of individuals to white-nose syndrome in eastern and midwestern United States and in Canada have caused population concern throughout this species' range.

TABLE 4.4-6

Federally Listed Species in the Project Area

Species	Federal Status	Habitat/Life History
Insects		
Dakota skipper (*Hesperia dacotae*)	Threatened	Dependent on high-quality, tall-grass and mixed-grass prairie. Habitat includes wet prairie dominated by bluestem grasses (*Andropogon* spp.), wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*), and smooth camas (Zygadenus elegans) and dry prairie on ridges and hillsides dominated by bluestem grasses, green needlegrass (*Nassella viridula*), pale purple coneflower (*Echinacea* sp.), upright coneflower (*Ratibida columnaris*), and blanketflower (*Gaillaridia aristata*).
Monarch butterfly (*Danaus plexippus*)	Candidate	Two main populations of monarchs in North America. The population found in North Dakota breed east of the Rocky Mountains and overwinter in Mexico. During the breeding season, monarchs lay their eggs on their milkweed host plant (*Asclepias* spp.). There are 10 species of native milkweed in North Dakota; two that are most familiar include common milkweed (*Asclepias syriaca*) and showy milkweed (*Asclepias speciosa*). Once the monarch larvae hatch, they feed exclusively on milkweed.
Poweshiek skipperling (*Oarisma poweshiek*)	Endangered	Habitat includes remnant prairie areas, including prairie fens, grassy lake and stream margins, moist meadows, sedge meadows, and wet-to-dry prairie. Adults are dependent on high-quality nectar from flowering herbaceous plants and shrubs for feeding and healthy and abundant suitable grasses for egg laying.
Flowering Plants		
Western prairie fringed orchid (*Platanthera praeclaral*)	Threatened	Preferred habitat includes unplowed, calcareous prairies and sedge meadows. Plants have also been observed in successional communities, including borrow pits, old fields, and roadside ditches. Land management practices such as burning, grazing, and mowing may affect the species depending on timing, frequency, and intensity.

Sources: FWS, 2022b; NDGFD, 2016c, 2019a, 2019c, 2019d; FWS, 1996.

4.4.4.1 Federally Threatened and Endangered Species

Of the five species that are federally listed, one is classified as endangered (Poweshiek skipperling), three are threatened (NLEB, DASK, and WPFO) and one is a candidate species (Monarch butterfly). Candidate species have no specific protection under the ESA, but are discussed below for informational purposes due to the possibility of future ESA listing.

Northern Long-eared Bat

The NLEB occurs in woodland habitats across eastern and north central United States, and in Canadian provinces from southern Yukon Territory to eastern British Columbia (78 FR 61046). The NLEB is currently listed as a threatened species, but is undergoing review by the FWS to be reclassified as endangered with a final decision planned for November 2022 (FWS 2022c). Currently, the NLEB is managed in North Dakota under the ESA 4(d) rule, which permits incidental take of NLEB under certain conditions. Incidental take associated with tree removal is prohibited when occurring within 0.25 mile of

known NLEB hibernacula or at known occupied maternity roost trees along with a 150-foot radius from those trees, from June 1 to July 31.

NLEB are only common in small portions of their range and are considered rare in North Dakota. White-nose syndrome, a fungal disease affecting bats, is considered the main reason for the decline of NLEB. NLEB utilizes caves and mines in the winter months for hibernation, and roost under the bark of trees in the summer. The approximate hibernation season for NLEB is October 1 through May 25 in North Dakota. NLEB utilize various tree species for roosting including aspen, oak, and maple. The maternity season for NLEB in North Dakota is from April 1 to September 30.

While the Project area is within the probable range of NLEB, the lack of forested areas (less than 1 percent of the proposed Project area, about 1.7 acres) and lack of large contiguous forested areas precludes highly suitable habitat from occurring along the proposed Project route, and no critical habitat has been designated nearby. While bats could potentially roost in the small patches of trees and shelter belts present in the Project area, this is unlikely due to the lower suitability of these smaller wooded areas. There are no documented occurrences of NLEB in Cass or Richland Counties, North Dakota; the nearest documented occurrence of NLEB is about 40 miles east of the Project area in Minnesota (Gillam et al., 2015; MNDNR, 2022a) and there are no known hibernacula or maternity roosts within 50 miles of the Project (FWS, 2021e). In addition, there are no known caves or mines along the Project area that could serve as potential hibernacula.

Indirect effects could occur on the NLEB due to construction if they are present in the Project area. Construction of the Project is tentatively scheduled from Spring to Fall in 2024, which would overlap with the NLEB active and breeding season. Construction noise and an increase in human activity would likely displace bats from their roosting or foraging areas (Schaub and Siemers, 2008). Since bats are highly mobile, they would likely move to surrounding wooded areas, and the impacts would be insignificant. Tree clearing could reduce available habitat, but as the proposed amount of tree clearing is small, any reduction would be minor. WBI Energy has proposed multiple measures to avoid and minimize impacts on forested lands including selective and collocated routing to avoid forest, use of the guided bore crossing method, and reducing the size of workspaces.

In WBI Energy's May 27, 2022 informal consultation request sent to the FWS, WBI Energy indicated that due to the overall lack of suitable habitat within and immediately adjacent to the Project area, in addition to no known presence of the species within Cass and Richland Counties, the Project *may affect, but is not likely to adversely affect* the NLEB. In a letter dated June 29, 2022, in response to WBI Energy's informal consultation request, the FWS concurred that the Project *may affect, but is not likely to adversely affect* the NLEB. We agree with this finding. Thus, section 7 consultation is complete for this species.

Poweshiek Skipperling

The Poweshiek skipperling is an endangered butterfly found in remnant prairie areas, meadows, and grassy lake and stream margins preferring plant species such as bluestem, smooth ox-eye, dropseed, sideoats grama, sedges, and purple coneflower. Threats to the Poweshiek skipperling include cattle grazing, habitat loss and fragmentation, isolation of populations, and drought. Adults require high-quality nectar and abundant grasses for egg laying. One generation is typically produced per year, with larvae overwintering aboveground on host plants. Adults emerge in June and July with single flight periods lasting 2 to 4 weeks.

Poweshiek skipperling have historically been found in North Dakota, but are currently only known in Wisconsin, Michigan, and Manitoba (FWS, 2021d) and are believed to be extirpated from North Dakota (NDGFD, 2019e; Dyke et al., 2015). Critical habitat is in North Dakota, with the nearest critical habitat 22 miles southwest of the Project area. The closest critical habitat is in Minnesota, approximately 20 miles from the Project area. Therefore, there would be *no effect* on critical habitat. WBI Energy completed a

habitat assessment during the 2021 field surveys, and no suitable habitat for Poweshiek skipperling was documented. The extensive agricultural areas and non-native grasses that predominate in the Project area do not provide suitable habitat for Poweshiek skipperling. Based on the information above, we have determined that the Project would have *no effect* on the Poweshiek skipperling. Thus, section 7 consultation is complete for this species.

Dakota Skipper

The DASK is a threatened butterfly species, with cattle grazing, haying, lacking habitat management, pesticides, flooding, habitat fragmentation, population isolation, drought, climate change, and conversion of prairie habitats causing impacts on the species. DASK are found in tall-grass and mixed-grass prairie in isolated sites in western Minnesota, northeastern South Dakota, and the northern half of North Dakota (FWS, 2016). DASK produce one generation per year with larvae overwintering at or below ground level. Larvae emerge in the spring and pupate in June. Adults fly for 2 to 4 weeks in June and July, and eggs are laid on plants and grasses. The species prefers areas with alkaline soils and abundant flowering plants including mixed bluestem, green needlegrasses, purple coneflower, blanketflowers, black-eyed Susan, and evening primrose. The Project area is within DASK's historical range in Richland County, North Dakota, but there have been no recent records of DASK in the Project area. DASK is considered extirpated from Richland County.

WBI Energy completed a habitat assessment as part of the 2021 field surveys in the Project area[12]. Suitable habitat for DASK includes native prairies consisting of native grasses and diverse forbs (FWS, 2018). No suitable habitat was documented in the Project area, but historical habitat exists about 2 miles southwest of MP 25.7, and designated critical habitat to the Project is 22 miles west of the Project area (FWS, 2019a); therefore, there would be *no effect* to critical habitat for DASK. The closest documented location of DASK is in Ransom County at the Sheyenne National Grasslands approximately 8 miles west/southwest of the proposed route, but the status at this site is unknown, and the population may be eradicated from this site as the species has not been observed in recent years. DASK habitat has been modified in the Sheyenne National Grasslands due to intensive grazing, leafy spurge infestation, and herbicide use. DASK are not known to disperse widely (typically to a maximum of 0.62 mile migration) and would be unlikely to use the Project area for dispersal, especially due to the preponderance of agricultural lands and non-native grasses.

Construction activities could generally pose a risk to DASK, primarily through degradation of suitable habitat. DASK are highly dependent on native plants, and construction activities can introduce and spread noxious and invasive plant species. WBI Energy would implement weed control measures as discussed above in section 4.4.2.2 for the *Noxious Weeds Management Plan*, such as contractor education, cleaning of equipment, and weed treatment where applicable, to reduce the threat of spread of invasive plants, and disturbed areas would be revegetated using appropriate seed mixes, causing a short-term impact on plant communities. Adult DASK avoid areas of active disturbance such as pipeline construction, further limiting the potential of dispersal to the Project area from adjacent locations during their flight period. Active avoidance of ongoing disturbance could cause a modification of DASK behavior.

In WBI Energy's May 27, 2022 informal consultation request sent to the FWS, WBI Energy indicated that due to the overall lack of suitable DASK habitat within and immediately adjacent to the Project area, as well as the species' poor dispersal abilities, and the implementation of the proposed mitigation measures (e.g., implementation of weed control measures and revegetation efforts), the Project *may affect, but is not likely to adversely affect* DASK. In a letter dated June 29, 2022, in response to WBI Energy's informal consultation request, the FWS concurred that the Project *may affect, but is not likely to*

[12] See WBI Energy's filing accession number 20220527-5343, Resource Report 3, appendix E.

adversely affect DASK. We agree with this finding. Thus, section 7 consultation is complete for this species.

Western Prairie Fringed Orchid

The WPFO is a threatened terrestrial orchid that can be found in tallgrass prairies and sedge meadows in remnant native plant communities [Minnesota Department of Natural Resources (MNDNR, 2022b)]. In North Dakota, the range is limited to Richland and Ransom Counties. The WPFO prefers wet habitats in southeastern North Dakota such as swales. Plant species commonly found in association with WPFO include big bluestem, little bluestem, sedges, switchgrass, and prairie sandreed. WPFO utilizes a relationship with soil fungi for germination and seedling growth, and a relationship with the sphinx moth for seed production. The species emerges in March with senescence occurring in September. Threats to the WPFO include woody encroachment, invasive plants, erosion and sedimentation, modified fire conditions, conversion of prairie to cropland, haying/mowing, and use of herbicides and insecticides.

The Project area is within the historic range of the WPFO. There is one historic record of the WPFO within 1 mile of the Project area east of MP 30.4, but the record is over 35 years old. Other populations may be found in the Sheyenne National Grasslands approximately 8 miles west/southwest of the proposed route. Several populations of WPFO have been recently extirpated in North Dakota, and many areas with historical habitat are becoming unsuitable. The NDPRD commented expressing concern regarding Project impacts on the WPFO, but deferred to the FWS. WBI Energy's 2021 field effort did not document WPFO or suitable habitat. Agricultural fields and non-native grasses are not conducive to WPFO reproduction so it would be highly unlikely that WPFO is present within the Project area (MNDNR, 2022b). While unlikely to occur, mitigation efforts of revegetation and weed control measures would limit any potential impact on WPFO and its habitat.

In WBI Energy's May 27, 2022 informal consultation request sent to the FWS, WBI Energy indicated that due to the preponderance of agricultural lands and the lack of suitable habitat for the WPFO, including intact prairie and sedge meadows (swales) and associated native plant species, and the implementation of the proposed mitigation measures (e.g., implementation of weed control measures as described above for DASK and reseeding/revegetation efforts in accordance with NRCS recommendation and WBI Energy's Plan) the Project *may affect, but is not likely to adversely affect* the WPFO. In a letter dated June 29, 2022, in response to WBI Energy's informal consultation request, the FWS concurred that the Project *may affect, but is not likely to adversely affect* the WPFO. We agree with this finding. Thus, section 7 consultation is complete for this species.

Monarch Butterfly

The monarch butterfly is a candidate species found in areas with milkweed and rich nectar sources. Breeding populations can be found in North Dakota seasonally, migrating to central Mexico during the winter (NDGFD, 2021). The monarch butterfly lay eggs on milkweed, with larvae emerging after 2 to 5 days. The larvae feed on milkweed for 9 to 18 days, pupate to the chrysalis stage, and emerge as adults 6 to 14 days later. Multiple generations may be produced within a breeding season and most adults live for 2 to 5 weeks. Population declines for this species have been documented over the last 20 years. The monarch butterfly has been affected generally by habitat fragmentation and loss, pesticides, and climate change.

Multiple species of milkweed can be found in North Dakota. WBI Energy documented small numbers of common milkweed during its 2021 habitat assessment. Additional milkweed populations and/ or species may be present around some of the ditches and woodland edges of the Project area. As agricultural areas and non-native grasses predominate in the Project area and only a small amount of the Project area is suitable for milkweed, it is unlikely that the abundance and quality of milkweed that would be impacted during construction would be robust enough to cause population-level declines. If individual

milkweed plants are destroyed it could cause monarch butterflies to relocate to other areas to breed. If clearing of milkweed plants occurs after monarch butterflies have returned to the area and laid their eggs, the eggs, hatched larva, or pupae could be directly destroyed. However, in areas that are disturbed, milkweed would be expected to recolonize areas where an active seedbank exists within 1-3 years. Monarch butterflies could also be subject to visual or physical disturbance during various construction activities, potentially resulting in relocation and behavior modification. Construction and operation of the Project could result in the spread of invasive plants, but implementation of weed control measures as described above for DASK and reseeding/revegetation efforts in accordance with NRCS recommendation and WBI Energy's Plan, would minimize potential impacts. Project operation, including establishment of permanent aboveground facilities, access roads, and mowing of the permanent right-of-way could also affect milkweed and the monarch butterfly. Any potential Project impacts are expected to be minor due to the paucity of suitable habitat within the Project area, implementation of mitigation measures, and the restoration and revegetation of the right-of-way.

Conclusion for Federally Listed Species

Although consultation is complete based on the Project concurrence issued by FWS, construction is not proposed until late 2023 or early 2024. The FWS recommended that WBI Energy re-consult to ensure that no new species have been listed or additional information about species distribution has been acquired. Additionally, in section 3, we recommended that WBI Energy adopt an alternative route (Wild Rice River Route Alternative - MP 55) as part of the Project, and these areas have yet to be surveyed and consulted on. Therefore, **we recommend that:**

- **WBI Energy should <u>not begin</u> construction activities <u>until</u>:**
  - **a. WBI Energy files with the Secretary the results of updated consultation with the FWS concerning the Wild Rice River Route Alternative - MP 55 and any new species that may have been listed Project-wide;**
  - **b. if required, the staff completes any additional ESA consultation with the FWS; and**
  - **c. WBI Energy has received written notification from the Director of OEP, or the Director's designee, that construction or use of mitigation may begin.**

4.4.4.2 State Species of Concern

North Dakota does not have an endangered species program, but classifies species of concern as Species of Conservation Priority. This classification is part of North Dakota's Wildlife Action Plan (Dyke et al., 2015) which categorizes species into three levels according to their conservation need, with Level 1 species being of greatest concern. Level 1 Species of Conservation Priority that may occur in the Project area can be found in table 4.4-7. No species of conservation priority were observed during the 2021 field surveys; however, surveys were conducted outside of the migratory nesting bird season.

TABLE 4.4-7

North Dakota Game and Fish Level 1 Species of Conservation Priority that May Occur within the Project Area

Species	Preferred Habitat	Preferred Habitat within the Project Area
Mammals		
Big Brown Bat *Eptesicus fuscus*	Habitat generalist. Uses structures, bridges, and dead trees for roosting	Yes

TABLE 4.4-7

North Dakota Game and Fish Level 1 Species of Conservation Priority that May Occur within the Project Area

Species	Preferred Habitat	Preferred Habitat within the Project Area
Black-tailed Prairie Dog *Cynomys ludovicianus*	Forms large communities in flat prairies with short vegetation. Often in areas grazed by livestock.	No
Little Brown Bat *Myotis lucifugus*	Uses structures near foraging areas as roosts. Hibernates in caves, mines, and rock crevices.	Yes
Northern long-eared bat [a] *Myotis septentrionalis*	Wooded habitats, roosts in loose bark within holes. Hibernates in caves and mines.	No
Townsend's Big-eared Bat *Corynorhinus townsendii*	Commonly found in forests and riparian zones during the summer, winters in caves and mines.	No
Birds		
American Bittern *Botaurus lentiginosus*	Large wetlands with tall emergent vegetation and upland grasslands.	Yes
Baird's Sparrow *Ammodramus bairdii*	Large continuous native prairies, grasslands, and grazed pastures. Found less often in dense wet meadows.	Yes
Black-billed Cuckoo *Coccyzus erythropthalmus*	Edges of scrub-shrub prairie and mixed forest habitat. Also found in riparian areas, farmsteads, within forests.	Yes
Black Tern *Chlidonias niger*	Shallow fresh and brackish wetlands with open water and emergent vegetation.	Yes
Chestnut-collared Longspur *Calcarius ornatus*	Open, arid, mixed grass, and short grass prairies with little shrubs and litter. Grazed and maintained grasslands are preferred. Nests on the ground.	Yes
Ferruginous Hawk *Buteo regalis*	Open grassland and shrub communities. Nest in isolated tree, in shrubs, or on the ground.	Yes
Franklin's Gull *Leucophaeus pipixcan*	Prairie wetlands with emergent vegetation and floating mats of vegetation.	Yes
Grasshopper Sparrow *Ammodramus* savannarum	Native grasslands with patches of bare ground, leaf litter, and sparse woody vegetation. Nests on the ground.	Yes
Greater Sage Grouse *Centrocercus urophasianus*	Leks are commonly in sagebrush grasslands and agricultural land.	No
Horned Grebe *Podiceps auritus*	Wetlands and waterbodies with emergent vegetation and open water.	Yes
Lark Bunting *Calamospiza melanocorys*	Large contiguous grasslands with sagebrush present, weedy agricultural fields, hay land, and pastures. Nests under tall grass or cactus for protection.	No
Long-billed Curlew Numenius *americanus*	Large open shortgrass prairies near waterbodies or wetlands.	Yes
Marbled Godwit *Limosa fedoa*	Sparsely vegetated native grasslands near wetlands.	Yes
Nelson's Sparrow *Ammodramus nelsoni*	Emergent freshwater wetlands with dense vegetation. Also uses marshes and wet meadows.	Yes

TABLE 4.4-7

North Dakota Game and Fish Level 1 Species of Conservation Priority that May Occur within the Project Area

Species	Preferred Habitat	Preferred Habitat within the Project Area
	prairies, meadows, and lake margins. Nests on the ground in shallow	
Red-headed Woodpecker *Melanerpes erythrocephalus*	Deciduous forests along rivers, roadsides, agricultural areas, and developed areas within tree cavities.	Yes
Sprague's Pipit *Anthus spragueii*	Large native grasslands with sparse vegetation and little to no grazing.	Possible
Swainson's Hawk *Buteo swainsoni*	Grasslands and agriculture fields with nearby isolated trees.	Yes
Yellow Rail *Coturnicops noveboracensis*	Shallow fresh and brackish wetlands dominated by emergent vegetation.	Yes
Wilson's Phalarope *Phalaropus* tricolor	Emergent wetlands, open water, and shorelines.	Yes
Amphibians and Reptiles		
Canadian Toad *Anaxyrus hemiophrys*	Perennial lakes, ponds, and wetlands. Burrows into the ground.	Yes
Plains Spadefoot *Spea bombifrons*	Dry, open grasslands with sandy or loose soil. Sometimes found in ephemeral wetlands. Burrows until it reaches damp soil. Emerges from ground after heavy rains.	No
Smooth Green Snake *Opheodrys vernalis*	Shortgrass grasslands, native prairies, meadows, and woodland clearings. Hibernates in burrows, crevices, and road embankments.	No
Plains Hog-nosed Snake *Heterodon nasicus*	Grasslands, prairies, mixed forests, sand dunes with sandy or gravelly soil. Burrows or uses mammal burrows for cover.	No
Fish		
Sturgeon Chub *Marcrhybopsis gelida*	Turbid rivers with moderate to strong currents with rock, gravel, or sand bottoms.	No
Sicklefin Chub *Marcrhybopsis meeki*	Channels of large turbid rivers with strong currents and sand or gravel bottoms.	No
Northern Pearl Dace *Margariscus nachtriebi*	Small streams with depths of 1 to 2 feet with gravel or sand bottoms.	No
Blue Sucker *Cycleptus* elongatus	Riffles and narrow chutes of large turbid rivers with fast currents and gravel bottom rivers.	No
Mussels		
Creek Heelsplitter *Lasmigona compressa*	The Red River and its tributaries. Range has been reduced due to changes to the Red River and its tributaries.	Yes
Pink Papershell *Potamilus ohiensis*	Large river systems, mainly the Missouri River and its tributaries with mud, sand, or gravel substrates.	No
Insects		
Monarch Butterfly [b] *Danaus plexippus*	Grassy areas with milkweed, native flowers, and abundant nectar sources	Yes

TABLE 4.4-7

North Dakota Game and Fish Level 1 Species of Conservation Priority that May Occur within the Project Area

Species	Preferred Habitat	Preferred Habitat within the Project Area
Regal Fritillary *Speyeria idalia*	Tall grass prairies and native prairies with violets.	Yes

Sources: NDGFD, 2019e; MNHP, 2022a; 2022b, 2022c.

[a] This species is also federally listed as threatened under the ESA (see text in section 4.4.4.1).

[b] This species is also a candidate for federal listing under the ESA (see text in section 4.4.4.1).

Construction activities can impact aquatic species of concern through increased turbidity, temperature changes, pollution, and entrainment, as well as direct mortality on benthic species. As previously discussed, WBI Energy would utilize mitigation measures in its Plan and their Procedures to reduce impact including guided bore crossings, safe storage of hazardous materials, and intake screens. These mitigation efforts would ensure that impacts on aquatic species are minor, localized, and short-term.

Wildlife species of concern can be impacted by construction activities in both the short-and long-term. Noise, increased human activity, and habitat alteration and fragmentation can displace wildlife from suitable habitats. Mortality or injury could result from destruction of ground nests or vehicle collisions, especially for less mobile species. Migratory bird habitat could also be affected through temporary altercations and disturbance. As the majority of the habitats are already disturbed and would be restored to preconstruction conditions, and forested habitats would be minimally affected, impacts on habitats of these species would be expected to be minimal. Most habitats impacted by the Project do not support the species listed above. Additional mitigation measures such as performing preconstruction nesting bird surveys, installing wildlife escape ramps along trenches, and checking for wildlife before performing work, would ensure that impacts on state species of concern are minimized and not significant.

4.5 LAND USE, RECREATION, AND VISUAL RESOURCES

4.5.1 Land Use Impacts and Mitigation

Land use categories in the Project area were identified using the 2019 Multi-Resolution Land Characteristics Consortium National Land Cover database. Existing land uses consist of agricultural land, open land, forest, developed land, and open water. A total of 791.5 acres would be temporarily disturbed during construction of the Project. Land temporarily impacted during construction, but not required for permanent operations, would be allowed to revert to preconstruction uses. Upon completion, WBI Energy would maintain 372.5 acres for the permanent pipeline right-of-way, aboveground facilities, and permanent access roads. WBI Energy would use a total of 80 temporary access roads during construction, affecting 24.4 acres, that would be restored to preconstruction conditions. Seven permanent access roads would be constructed to access the new MDU-Kindred Border Station, the new MDU-Wahpeton Border Station, and to the four block valve setting and pig launcher/receiver site not collocated with a compressor station or border station. These would permanently affect 3.2 acres.

WBI Energy would obtain easements from landowners and land-managing agencies to construct and operate natural gas facilities or acquire the land on which the facilities would be located. Easements would be temporary, granting the operator the use of the land during construction (e.g., for temporary

workspace, access roads, yards); or permanent, granting the operator the right to operate and maintain the facilities after construction.

For the Project, all temporary easements (e.g., ATWS, access roads, and staging areas) would be restored, returned to the landowners in accordance with the terms of the landowner agreement, and allowed to revert to prior uses. The land retained as permanent right-of-way would generally be allowed to revert to its former use, except for certain activities, such as the construction of permanent structures, including houses, house additions, trailers, tool sheds, garages, poles, patios, pools, septic tanks, or other objects not easily removable, or the planting of trees, which would be prohibited within the 50-foot-wide permanent easement.

A summary of the existing land use categories affected by construction and operation of the Project is provided in table 4.5-1.

Agricultural Land. Agricultural land is defined as cultivated fields and working areas within farms and is the primary land use type that would be affected by the Project. The Project would impact 728.1 acres of agricultural land. About 517.6 acres of agricultural land would be affected by construction, and about 350.9 acres would be affected by operations (see table 4.5-1). No known specialty or organic crops have been identified in the Project area.

Land along the pipeline route would be reclaimed following construction and revert to previous use. The 350.9 acres of agricultural land within the permanent right-of-way could continue to be used for agricultural purposes.

We received a comment that the Project would negatively impact farmland including interruption of production, disruption of topsoil, farmer concerns regarding damaging the pipeline during farm activities, drain tile placement and maintenance limitations, and the inability to place structures within the easement. WBI Energy would bury the pipeline with a minimum depth of 4 feet to prevent interference with agricultural activities, such as plowing and planting. During grading or excavation, up to 12 inches of topsoil would be segregated from subsoil and replaced during backfilling in its respective horizons and WBI Energy would attempt to restore preconstruction contours. WBI Energy would work with landowners to restore areas with an appropriate seed mix or leave them unseeded for agricultural planting.

Permanent workspaces for the aboveground facilities would permanently convert 1.3 acres of agricultural land to developed land.

As discussed in section 4.2, if present, agricultural drain tiles could be damaged during pipeline construction. WBI Energy would work with landowners during the easement negotiation process to identify existing drain tiles that would be crossed by the Project. If damage to existing drain tiles occurs as a result of pipeline construction, WBI Energy would work with the landowner to restore the damaged drain tiles or compensate the landowner for repairs, relocation, reconfiguration, or replacement.

Agricultural land in the construction area generally would be taken out of production for one growing season while Project facilities are constructed. However, it is possible that saturated or frozen soil conditions could delay topsoil replacement and final grading until conditions allow for proper soil handling and restoration. In addition, some restoration issues within agricultural areas may develop over time after initial restoration (e.g., trench subsidence, revegetation concerns) that may require additional disturbance of the right-of-way by WBI Energy to correct. Problems with topsoil replacement, compaction, subsidence, rocks, and drainage and irrigation systems resulting from construction in active agricultural areas would continue to be monitored and corrected until restoration is successful. WBI Energy has proposed to negotiate agreements with individual landowners to provide compensation for crop damage or loss caused by Project construction.

TABLE 4.5-1

Land Use Impacts During Construction and Operation of the Project (in acres) [a, b, c]

	Agricultural		Open Land		Forest		Developed		Open Water		Total	
Facility/County/Workspace	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**
Cass County												
Pipeline Facility												
Wahpeton Expansion Pipeline	217.6	145.5	0.0	0.0	0.3	0.3	3.5	2.5	0.8	0.6	**222.2**	**149.0**
ATWS	49.4	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	**50.2**	**0.0**
Aboveground Facilities												
Mapleton Compressor Station	2.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	**2.9**	**0.0**
MDU-Kindred Border Station	4.1	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**4.1**	**1.7**
Block Valve 2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.7**	**0.1**
Access Roads	11.1	0.2	0.0	0.0	0.1	0.0	2.4	<0.1	0.2	0.0	**13.7**	**0.2**
Contractor Yards												
Kindred Yard	3.5	0.0	0.3	0.0	0.2	0.0	<0.1	0.0	0.0	0.0	**4.3**	**0.0**
Kost Yard	19.1	0.0	1.6	0.0	0.0	0.0	11.8	0.0	1.6	0.0	**35.1**	**0.0**
Subtotal	**308.4**	**147.5**	**1.9**	**0.0**	**0.6**	**0.3**	**18.6**	**2.5**	**2.6**	**0.6**	**332.1**	**151.9**
Richland County												
Pipeline Facility												
Wahpeton Expansion Pipeline	299.5	200.4	8.4	5.7	0.8	0.8	3.9	2.5	10.0	7.3	**322.5**	**216.7**
ATWS	59.3	0.0	1.4	0.0	0.1	0.0	1.3	0.0	0.5	0.0	**62.8**	**0.0**
Aboveground Facilities												
MDU - Wahpeton Border Station	3.5	1.7	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	**4.0**	**1.7**
Block Valve 4	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.0	<0.1	0.0	**0.7**	**0.2**
Block Valve 5	0.9	0.3	0.0	0.0	0.0	0.0	0.3	<0.1	0.0	0.0	**1.2**	**0.3**
Block Valve 6	0.4	0.1	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0	**0.5**	**0.2**
Access Roads	7.2	1.1	0.3	0.0	0.3	0.0	5.7	1.8	0.4	<0.1	**13.9**	**2.9**
Contractor Yards												
Comstock North Yard	20.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	<0.1	0.0	**21.0**	**0.0**
Wahpeton City Yard	28.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	**28.5**	**0.0**

TABLE 4.5-1

Land Use Impacts During Construction and Operation of the Project (in acres) [a, b, c]

	Agricultural		Open Land		Forest		Developed		Open Water		Total	
Facility/County/Workspace	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**	**Const.**	**Oper.**
Comstock South Yard	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	**4.7**	**0.0**
Subtotal	**419.7**	**203.4**	**10.1**	**5.7**	**1.2**	**0.8**	**17.1**	**4.4**	**11.2**	**7.3**	**459.4**	**221.5**
SUBTOTALS BY FACILITY TYPE												
Pipeline Facility	625.8	345.9	9.8	5.7	1.2	1.1	9.5	5.1	11.3	7.9	**657.8**	**365.7**
Aboveground Facilities	12.7	3.6	0.0	0.0	0.0	0.0	0.8	0.0	0.2	0.0	**13.6**	**3.6**
Access Roads	18.3	1.3	0.3	0.0	0.3	0.0	8.1	1.8	0.6	<0.1	**27.6**	**3.2**
Contractor Yards	71.4	0.0	1.9	0.0	0.2	0.0	17.3	0.0	1.7	0.0	**92.5**	**0.0**
PROJECT TOTAL	**728.1**	**350.9**	**12.0**	**5.7**	**1.8**	**1.1**	**35.7**	**6.9**	**13.8**	**7.9**	**791.5**	**372.5**

[a] The numbers in this table were rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. Construction acreages include operational acres.

[b] Block Valve 1 (and associated pig launcher/receiver) would be constructed and operated within the existing Mapleton Compressor Station site. Block Valves 3 and 7 would be constructed and operated within the construction and operational footprints of the MDU-Kindred Border Station and the MDU-Wahpeton Border Station, respectively. The construction and operational acreages for these block valve settings are included within the acreages for the Mapleton Compressor Station, MDU-Kindred Border Station, and the MDU-Wahpeton Border Station. Four pig launcher/receiver settings would be collocated at Block Valves 1, 2, 5, and 7. Land requirements for the pig launchers/receivers is accounted for in the land requirements for the four block valves or other aboveground facilities.

[c] Const. = construction; Oper. = operational

Revegetation of agricultural areas would be considered successful when crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Resumption of agricultural operations following Project construction and/or planting of a cover crop would aid in the restoration of soil structure and productivity that could take several years to achieve success, depending on site-specific conditions and land use practices. Buildings, structures, wells, reservoirs, obstructions, or removal/addition of cover would not be allowed within the permanent pipeline right-of-way. WBI Energy would minimize impacts and ensure restoration of land disturbed during construction in accordance with WBI Energy's Plan and Procedures, and the other construction, restoration, and mitigation plans identified in this EIS. Based on the land use characteristics identified in the Project area and the implementation of WBI Energy's mitigation plans, it is anticipated that the impacts resulting from construction and operation of the Project on agricultural land would be minimized to the extent practicable.

Open Land. Open land includes non-forested and undeveloped land not classified for another use, including land maintained as utility rights-of-way (e.g., existing overhead and underground electric transmission, natural gas transmission, and oil transmission facilities). The Project would impact about 12.0 acres of open land.

Areas disturbed during construction would be restored in accordance with WBI Energy's Plan and would be maintained in an herbaceous state as open land per the definition above. About 5.7 acres of open land would be within the permanent pipeline easement; however, because these areas would be restored as near as practicable to preconstruction conditions, there would be no change in land use. WBI Energy would implement the BMPs provided in the Plan during construction in open land. Based on these measures, we conclude that impacts on open land would be temporary and negligible.

Forest. Forest includes wooded upland, hedgerows, and tree stands near wetlands. Forested wetlands are discussed in section 4.3.3. The Project would impact 1.8 acres of forest, including 1.2 acres for the pipeline, 0.3 acres for access roads, and 0.2 acres for contractor yards. Upon completion, WBI Energy would maintain 1.1 acres for the permanent pipeline right-of-way in a non-forested state.

Following construction, permanent impacts would result from the presence of the 50-foot-wide permanently maintained portion of the right-of-way, where forest would be converted to open land and maintained in an herbaceous state in accordance with the Plan. WBI Energy has minimized forest impacts by siting the proposed facilities adjacent to existing rights-of-way, minimizing construction workspaces, and utilizing open, industrial/commercial, or agricultural land for aboveground facilities and contractor yards to the extent practicable. Based on these measures, we conclude that impacts on forest would be minimized to the extent practical and would not be significant.

Developed Land. Developed land includes utility stations, roads, commercial, retail facilities, manufacturing, or industrial plants, and transportation rights-of-way. The Project would impact 35.7 acres of developed land. Of the 35.7 acres of developed land, about 6.9 acres would be permanently encumbered by an easement during operation, but these developed land uses within the permanent right-of-way are expected to return to preconstruction conditions.

Developed lands affected by the Project primarily consist of residential, commercial, and industrial land as well as existing roads and utility lines.

The Project would cross 75 roads and railroads. The Project would also cross two historic railroad corridors (train tracks are no longer present). WBI Energy would cross roadways that range from dirt and two-track roads to local paved roads, state highways, and interstate highways. These roadways would be crossed using conventional road bore or open-cut crossing methods as described in section 2.3.2. The bore crossing method allows the roadway to remain in-service while the installation process takes place, resulting

in little to no disruption to traffic. In the event of an open-cut crossing, impacts on roadways could include short-term traffic congestion and disruption. To minimize these impacts, WBI Energy would implement traffic control measures to assist with traffic flow. Following construction roadways would be restored to preconstruction conditions. Major highways would all be crossed by bores, thus no traffic disruptions or diversions are expected.

Construction across utility corridors would be in accordance with WBI Energy's Plan and applicable crossing permits and operator approvals. In general, developed land uses affected by construction and operation of the Project would return to preconstruction conditions and uses. Therefore, we have determined that the Project's impacts on developed land would be temporary and negligible.

Open Water. The Project would cross 13.8 acres of surface waters and emergent wetlands. WBI Energy would cross all waterbodies via guided bore. No open water would be permanently filled or rediverted as a result of the Project. Section 4.3 provides additional discussion of waterbodies, including descriptions, distances traversed, and measures to avoid, reduce, or mitigate potential effects. No significant impacts are anticipated.

4.5.2 Residential Areas and Planned Developments

Residential land is described as existing residential areas that include single and multiple family dwellings, as well as landscaped areas or driveways associated with an immediate residence. A total of 27 existing residences are within 500 feet of the proposed Project workspaces, but none would be within 50 feet of any temporary or permanent workspace.

WBI Energy consulted with the Cass and Richland County Planning and Zoning Offices and the planning and zoning offices for Mapleton, West Fargo, Horace, Kindred, Colfax, and Wahpeton. Based on provided data, two residential developments are planned in Cass County. It is not expected that construction and operation of the Project would conflict with these developments as they are both currently under construction and at least one mile from the Project.

There are two planned industrial/energy projects within 1 mile of the proposed Project. The Fargo-Moorhead Area Diversion project, currently under construction, includes a diversion channel and other river control structures for the Red River and its tributaries. Construction is expected to be completed in 2027 (Metro Flood Diversion Authority, 2022). A 350-megawatt solar facility, the Flickertail Solar Project, is planned near Colfax, North Dakota (estimated to be about 0.8 mile north of MP 39.7). Construction is estimated to be completed in 2024. Both planned industrial/energy projects are discussed in the cumulative impacts analysis of this EIS (see section 4.11).

Based on the above, we conclude that the Project would not impact residential areas or any planned or future developments in the Project area.

4.5.3 Public Land, Recreation, and Other Designated Areas

4.5.3.1 North Country National Scenic Trail

The Project would be parallel to the North Country National Scenic Trail from MP 35 to MP 36.8 and from MP 42.0 to MP 43.4; and would cross the trail at MP 42.4 (at the proposed bore crossing of 65th Street SE/County Road 4).

The North Country National Scenic Trail, the longest in the National Trails System, stretches over 4,800 miles from North Dakota to Vermont. The North Country National Scenic Trail crosses more than 160 federal, state, and local public lands including 10 National Forests, over 100 state parks, forests, and

game areas (North Country Trail Association, 2022a). The NPS administers the trail in partnership with land management agencies, and volunteer organizations (North Country Trail Association, 2022b). The North Country National Scenic Trail in the area of the Project is a mix of paved road and off-road sections.

WBI Energy estimates that the bore of the North Country National Scenic Trail/65th Street SE/County Route 4 would take two to three days. Recreational users of the North Country National Scenic Trail may experience traffic, visual, dust, and noise impacts if visiting during construction. WBI Energy has committed to coordinating with the NPS and North Country Trail Association about the timing of construction, proper signage that would be installed, and additional safety measures so the trail would be accessible during construction. Following construction, WBI Energy would restore areas to preconstruction conditions. The NPS indicated it would continue evaluation of potential impacts resulting from the proposed crossing, potentially including additional mitigation measures.

4.5.3.2 Conservation Land

The Project would not be within 0.25 mile of any national or state scenic byways, wild and scenic rivers, wildlife management areas, designated scenic areas, nature/forest preserves, campgrounds, or national landmarks; therefore, no impacts on these areas are expected.

The Conservation Reserve Program (CRP) is a voluntary program administered in North Dakota by the Farm Service Agency that allows owners of agricultural tracts to conserve environmentally sensitive lands with financial assistance from the federal government. Based on WBI Energy's coordination with landowners, there are no CRP lands that would be crossed by the Project; therefore, no impacts on CRP lands would occur.

The Agricultural Conservation Easement Program (ACEP) is a program administered in North Dakota by the NRCS that combines the purposes of the former Farmland and Ranch Lands Protection Program, Grassland Reserve Program, and Wetland Reserve Program. Based on WBI Energy's consultation with the NRCS, no ACEP land would be crossed by the Project; therefore, no impacts on ACEP lands would occur.

Private Land Open to Sportsmen (PLOTS) lands are areas of private land that are open to hunting based on agreements between the NDGFD and landowners. The PLOTS program also identifies public lands, wildlife management areas, and WPAs open to hunting. These lands provide walk-in public access only, defined as "an individual traveling by foot with any legal weapon, equipment, accessories, and provisions for the purposes of hunting. All other activities require written permission from the property owner" (NDGFD, 2022b).

The Project would cross one section of PLOTS land (2.5 acres) from MP 46.0 to 46.2. The PLOTS lands change often as new landowners join the program, therefore, WBI Energy would continue to monitor for any additional/new PLOTS lands that would be crossed prior to the start of construction. Construction of the proposed pipeline is scheduled to commence in the beginning of 2024 and would overlap with hunting season in the Project area. WBI Energy would post signs to notify users of construction. However, due to the small amount of PLOTS lands crossed, any potential impacts on PLOTS lands would be minor and temporary.

Grassland easements define permanent agreements between the USFWS and all present and future landowners to keep the land in native or restored grassland. The Wahpeton Expansion Project would not impact any grassland easements.

4.5.4 Landfills and Hazardous Waste Sites

WBI Energy reviewed publicly available federal and state regulatory databases including the EPA's EnviroFacts Website and the EPA dataset for landfill sites to identify hazardous waste sites, landfills, or other sites with potential for soil or groundwater contamination within 0.25 mile of the Project (EPA, 2021b; 2021c). No landfills were identified within 0.25 mile of the Project. Table 4.5-2 identifies the known hazardous waste sites within 0.25 mile of Project facilities.

TABLE 4.5-2

Hazardous Waste Sites Within 0.25 Mile of the Project

Facility Site	Location	Distance to Pipeline (miles)	Direction from Pipeline to Site
Nustar Energy—Mapleton Terminal	3639 165 Avenue Southeast Mapleton, North Dakota 58059	0.2	West
American Crystal Sugar-Kindred Piling Site	North Dakota Highway 46 East Kindred, North Dakota	0.1	West

Source: EPA, 2021b.

Both hazardous waste sites are more than 0.1 mile from proposed Project facilities. WBI Energy would adhere to its SPCC Plan to minimize and mitigate impacts of spills of hazardous materials during construction. It is possible that additional, unknown sites could be encountered along the pipeline route during construction. If any contaminated soils or groundwater are encountered during construction, WBI Energy would implement the measures specified in its *Plan for Unanticipated Discovery of Contaminated Environmental Media*, and would notify the landowner and, if required, the appropriate regulatory agency, of the discovery.

4.5.5 Visual Resources

4.5.5.1 Pipeline

Visual resources along the Project are a function of geology, climate, and historical process, and include topographic relief, vegetation, water, wildlife, land use, and human uses and development. Visual impacts associated with the pipeline construction rights-of-way and ATWS would include the removal of existing vegetation and the exposure of bare soils, as well earthwork and grading scars associated with heavy equipment tracks and machinery and tool storage. Other visual effects could result from the removal of large individual trees, the removal or alteration of vegetation that may currently provide a visual barrier, or landform changes that introduce contrasts in visual scale, spatial characteristics, form, line color, or texture.

Visual impacts are typically greatest where the Project parallels or crosses roads and may be seen by passing motorists, and on residences where vegetation has been used for visual screening of existing utility rights-of-way. The duration of visual impacts would depend on the type of vegetation that is cleared or altered. The impact of vegetation clearing would be shortest in areas consisting of short grasses and scrub-shrub vegetation and in agricultural crop and pasture lands, where the re-establishment of vegetation following construction would be relatively fast (generally less than 3 years).

The impact would be greater in forested land, which would take 30 to 50 years to regenerate mature trees. The greatest potential visual impact on forest would result from the removal of large specimen trees, which would take longer than other vegetation types to regenerate and would be prevented from re-establishing within the permanent right-of-way. The timing of restoration for vegetation is discussed in section 4.4.2. Although forests are present along the Project, only 1.8 acre of forest land would be impacted by the Project. In addition, about 51 percent of the Project would be adjacent to existing road, railroad, and/or electric transmission line rights-of-way. These existing rights-of-way are maintained periodically to remain as non-forested land. As a result, along the majority of the Project right-of-way, visual resources have been previously affected by other activities.

Because the Project would expand existing rights-of-way in most areas, the visual impact on motorists who observe road crossings would be minor. Construction adjacent to existing rights-of-way reduces the severity of impacts on visual resources because it minimizes vegetation clearing for the construction work areas and permanent right-of-way and also minimizes new fragmentation of vegetation and habitat.

After construction, disturbed areas would be restored and returned to preconstruction conditions in compliance with federal, state, and local permits; landowner agreements; WBI Energy's Plan; and applicable right-of-way requirements, with the exception of aboveground facility sites which are discussed further below.

4.5.5.2 Aboveground Facilities

Aboveground facilities associated with the Project could alter existing visual resources in two ways: (1) construction activity and equipment may temporarily alter the viewshed; and (2) aboveground facilities would represent permanent alterations to the viewshed. Construction of the new aboveground facilities would result in temporary visual impacts, including increased numbers of construction personnel, equipment, and materials removal of vegetation cover, and disturbance of soil. Construction impacts would generally cease following the completion of construction and restoration.

Following construction, the aboveground facilities would be the most visible components of the Project and would result in long-term to permanent impacts on visual resources. The extent of these visual impacts depends on factors such as quality of the viewshed, the degree of alternation of that view, the sensitivity or concern of potential viewers, the remoteness of the location, and the number of viewpoints from which the aboveground facilities would be seen.

4.5.5.3 Existing Aboveground Facilities

The modifications proposed by WBI Energy for the existing Mapleton Compressor Station (including installation of new Block Valve 1 and associated pig launcher/receiver) would occur within the property lines at already developed facilities, and no new or expanded operational footprint outside of the existing fencelines would be required. Because the modifications would be within the existing fencelines and the proposed modifications would be similar to the existing facility, visual impacts from construction and operation of this facility would be minimal. No permanent changes to the current visual landscape would occur from modifications to the Mapleton Compressor Station and installation of Block Valve 1 and associated pig launcher/receiver.

4.5.5.4 New Aboveground Facilities

Border Stations

Two new delivery stations (MDU-Kindred Border Station and MDU-Wahpeton Border Station) would be constructed at MPs 23.4 and 60.5, respectively. Block Valve 3 and associated pig

launcher/receiver and Block Valve 7 and associated pig launcher/receiver would also be installed at the border stations. These facilities are further described in section 2.0. The nearest residence to the MDU-Kindred Border Station site is about 3,587 feet southwest. According to WBI Energy, screening in the form of trees exists between the nearest residence and the proposed MDU-Kindred Border Station which would prevent sight of the facility from the residence. In addition, the Kindred Davenport Regional Airport is about 3,700 feet northwest.

The MDU-Wahpeton Border Station would be about 1,741 feet southwest of the nearest residence. According to WBI Energy, screening in the form of trees and brush exists between the nearest residence and the proposed MDU-Wahpeton Border Station which would prevent sight of the facility from the residence. However, the station may be visible from the nearest residence during the fall/winter when leaves fall from the trees. In addition, existing food processing and energy facilities are about 1.6 miles east of the proposed facility.

Based in the existing of existing screening between the new border stations and residences, we anticipate minimal visual impacts.

Block Valve Sites and Pig Launchers/Receivers

Block Valves 2 (and associated pig launcher/receiver), 4, 5 (and associated pig launcher/ receiver), and 6 would be at least 2,290 feet from the nearest residence. According to WBI Energy, current screening between proposed Block Valves 2 (and associated pig launcher/receiver), 4, and 5 (and associated pig launcher/receiver) and the nearest residence should block views of the proposed facility. While there is no existing screening between the nearest residence and Block Valve 6, it is not expected that the block valve would be visible due to the small size of the facility and the distance (2,290 feet) between them. WBI Energy is not proposing any visual screening at any block valve site. As discussed in section 4.7, the North Country National Scenic Trail, would be about 1.1 miles south of the Block Valve 5 (and associated pig launcher/receiver). According to WBI Energy, Block Valve 5 and associated pig launcher/receiver may be visible from the trail but impacts would be minimal due to the small size of the facility. Because of existing screening and the small size of the new block valves, visual impacts from construction and operation of these facilities would be minimal.

4.6 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires FERC to consider the effects of its undertakings on properties listed, or eligible for listing on the NRHP, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. WBI Energy, as a non-federal party, is assisting FERC in meeting our obligations under section 106 by providing data, analyses, and recommendations in accordance with 36 CFR 800.2(a)(3) and FERC's regulations at 18 CFR 380.12(f).

4.6.1 Area of Potential Effects

The Project area of potential effects (APE) is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). The APE for cultural resources comprises two distinct types of potential impacts: direct, and indirect or viewshed. The direct APE includes those areas of ground disturbance that would be impacted by construction of the Project. The indirect APE includes those areas adjacent to the Project that may incur visual impacts. Indirect impacts may be derived from the construction of aboveground infrastructure or the removal of vegetation to facilitate construction of the Project. Assessment of the indirect APE consisted of a visual evaluation of resources up to 0.5 mile from the Project area.

4.6.2 Cultural Resources Investigations

WBI Energy conducted surveys for both archaeological and architectural resources of the Project area, and provided the resulting reports (one for archaeological resources and one for architectural resources) to FERC and the North Dakota State Historic Preservation Office (SHPO). For archaeological resources, WBI Energy examined a generally 300-foot-wide survey corridor for the pipeline, a 50-foot-wide survey corridor for access roads, and the footprint of the remaining proposed facilities. For architectural resources, WBI Energy examined an area extending up to 0.5 mile from the Project area. As of August 2022, about 7.3 miles of pipeline, a portion of the MDU-Kindred Border Station, the MDU-Wahpeton Border Station, one contractor yard, and twenty access roads have not been surveyed for archaeological resources, and 0.7 mile of pipeline, the MDU-Wahpeton Border Station, one contractor yard, and two access roads have not been surveyed for architectural resources. In addition, a geomorphological assessment was recommended by WBI Energy, which has not yet been completed, and survey reports for the Wild Rice River Route Alternative MP 55 have not been submitted.

The direct APE was investigated for archaeological resources using a combination of pedestrian transects supplemented with shovel testing at varying intervals dependent upon existing field conditions. A total of 2,597.5 acres was surveyed. The archaeological survey documented ten archaeological sites (including eight historic artifact scatters, one prehistoric artifact scatter, and one artifact scatter with both historic and prehistoric components), nine isolated finds, and no resources associated with site leads were documented. The nine isolated finds were recommended as not eligible for listing on the NRHP. WBI Energy developed reroutes during the Pre-Filing Process to avoid impacts on the ten archaeological sites identified during the field surveys, and the Project as proposed and reviewed in the EIS avoids the ten referenced sites. Since the sites would be avoided, NRHP eligibility recommendations were not provided for these sites. For four of the sites between 50 and 100 feet from the Project workspace, fencing and monitoring was recommended. WBI Energy indicated it would provide a monitoring plan for these sites. For the remaining six sites, all greater than 100 feet from the Project workspace, no further work was recommended. SHPO comments on the report have not yet been received.

WBI Energy surveyed architectural resources 50 years or older that were identified within the indirect APE. Eighteen architectural resources were documented during the field investigations, including eleven dwelling/farmsteads, three bridges, an animal shelter and corral, an outbuilding, a granary and grain bins, and oil tanks and associated machinery. Three of the resources were recommended as not eligible for listing on the NRHP, and the remaining fifteen resources were unassessed. No adverse effects on these fifteen resources are anticipated due to their distance from the Project and/or the Project would not result in long-term or permanent changes to the viewshed. On March 8, 2022, the SHPO provided minor comments on the architectural report. WBI Energy indicated it would provide a revised report once surveys are completed.

4.6.3 Native American Consultations

WBI Energy contacted 15 federally recognized Native American tribes regarding the proposed Project in letters dated September 13, 2021 and September 15, 2021, including the Assiniboine and Sioux Tribes of the Fort Peck Reservation; Cheyenne River Sioux Tribe; Fort Belknap Indian Community; Northern Arapaho Tribe; Northern Cheyenne Tribe; Oglala Sioux Tribe; Red Lak Band of Chippewa Indians of Minnesota; Rosebud Sioux Tribe; Sisseton-Wahpeton Oyate of the Lake Traverse Reservation; Spirit Lake Sioux Tribe; Standing Rock Sioux Tribe; Three Affiliated Tribes of the Fort Berthold Reservation; Turtle Mountain Band of Chippewa Indians; Upper Sioux Community of Minnesota; and Yankton Sioux Tribe. These letters requested comments regarding the potential for the Project to affect resources of tribal concern and to ascertain if the tribes would like to participate in field surveys.

Following submission of the initial Project correspondence letters, WBI Energy contacted the 15 tribes via telephone and/or email. At the request of the Rosebud Sioux Tribe, Three Affiliated Tribes of the Fort Berthold Reservation, and the Turtle Mountain Band of Chippewa Indians, WBI Energy resubmitted the initial correspondence letter via email on September 24, 2021 and September 28, 2021. No additional correspondence has been received from these three tribes. In addition, no response to the initial Project correspondence letter has been received from the Assiniboine and Sioux Tribes of the Fort Peck Reservation, Cheyenne River Sioux Tribe, Fort Belknap Indian Community, Oglala Sioux Tribe, Red Lake Band of Chippewa Indians of Minnesota, Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, Spirit Lake Sioux Tribe, Standing Sioux Tribe, Upper Sioux Community of Minnesota, and the Yankton Sioux Tribe.

In a letter to WBI Energy dated November 5, 2021, and follow-up telephone conversation with WBI Energy on November 29, 2021, the Northern Arapaho Tribe indicated there were cultural resources sites within the Project APE that were of concern to the tribe. WBI Energy clarified that all identified sites have been avoided. Additionally, the Northern Arapaho Tribe requested to be part of future field surveys, unless another, more local tribe requested and subsequently participated in the surveys.

In an email dated September 28, 2021, the Northern Cheyenne Tribe requested to participate in future cultural resources surveys. WBI Energy contacted the Northern Cheyenne Tribe three times to coordinate future field survey participation of the Northern Cheyenne Tribe. No response was received by WBI Energy.

On March 1, 2022, WBI Energy submitted the archaeological and architectural survey reports to the 15 tribes. The Northern Cheyenne Tribe returned a letter of "No Adverse Effect" to WBI Energy on April 8, 2022. The tribe also requested to be notified of unanticipated discoveries that may be made during construction activities associated with the Project. No further comments on the reports have been received to date.

The Sisseton-Wahpeton Oyate of the Lake Traverse Reservation Tribe requested that a Tribal Cultural Specialist accompany the field survey crews during the upcoming field season. WBI Energy indicated that the Sisseton-Wahpeton Oyate of the Lake Traverse Reservation Tribe did not respond to inquiries regarding participating in additional field surveys in 2022.

On March 3, 2022, FERC sent letters to the same 15 tribes requesting participation in FERC's review of the Project. Specifically, FERC requested comments on the Project to ensure that the concerns of the tribes were identified and properly considered in our environmental analysis. We also requested assistance from the tribes in identifying properties of traditional, religious, or cultural importance to the tribes that may be affected by the Project. In response to our letter, the Sisseton-Wahpeton Oyate of the Lake Traverse Reservation contacted FERC via email on March 15, 2022, requesting the survey report. The tribe later confirmed it had received the report from WBI Energy. In a June 28, 2022 email, the Northern Cheyenne Tribe requested a copy of the survey report. We responded that the report had been provided in March, and we had received the tribe's "No Adverse Effect" letter. We also sent the NOI to the tribes. FERC has not received any further responses to the letters or NOI.

4.6.4 Unanticipated Discoveries Plan

WBI Energy developed a Project-specific *Plan for Unanticipated Discovery of Historic Properties or Human Remains During Construction*. This plan outlines the procedures to follow, in accordance with state and federal laws, if unanticipated cultural resources or human remains are discovered during construction of the Project. The plan was submitted to the SHPO, tribes, and FERC. We requested minor changes to the plan and several tribes requested to be notified of any unanticipated discoveries. The plan provides for notification of tribes. We find the revised plan acceptable.

4.6.5 Compliance with the National Historic Preservation Act

We have not yet completed the process of complying with the NHPA. Additional investigations and report submittals remain outstanding. To ensure that the Commission's responsibilities under the NHPA and its implementing regulations are met, **we recommend that:**

- **WBI Energy should not begin construction of facilities and/or use of all contractor yards or temporary workspaces and new or to-be-improved access roads until:**
  - **a. WBI Energy files with the Secretary:**
    - **i. remaining cultural resources survey reports;**
    - **ii. site evaluation reports and avoidance/monitoring or treatment plans, as required; and**
    - **iii. comments on the cultural resources reports and plans from the North Dakota SHPO.**
  - **b. The ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and**
  - **c. The FERC staff reviews and the Director of OEP, or the Director's designee, approves the cultural resources reports and plans, and notifies WBI Energy in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

  All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CUI//PRIV-DO NOT RELEASE."

4.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.7.1 Socioeconomics

The potential socioeconomic effects of construction and operation of the Project include changes in population levels or local demographics, increased employment opportunities, increased demand for housing and public services, tourism and transportation impacts, and an increase in government revenue associated with sales, payroll, and property taxes. Additionally, section 4.7.7 provides an analysis of environmental justice for the Project in accordance with CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act* (1997) and *EPA's Promising Practices for EJ Methodologies in NEPA Reviews*.

The socioeconomic study area considered for this analysis includes the counties traversed by the Project facilities. The Wahpeton Expansion Project would traverse portions of Cass and Richland Counties, North Dakota.

Construction of the Project would have temporary and localized impacts on the socioeconomic conditions in the area of the Project due to the limited construction period and distribution of workforce. The various components of the Project would require about 7 months to complete.

4.7.1.1 Population and Employment

Table 4.7-1 provides a summary of selected demographic and socioeconomic conditions by county for the Project. Construction of the Project would temporarily increase the population in the area of the Project. WBI Energy estimates that approximately 225 total workers would be used to construct the Project

at its peak. The average workforce is expected to be about 175 people. Peak construction is estimated to occur from spring to the fall 2024. WBI Energy estimates that the majority of its construction workforce would temporarily relocate to the Project area for the duration of construction activities. WBI Energy anticipates one new full-time job would be needed for operation of Project facilities.

TABLE 4.7-1

Existing Socioeconomic Conditions in the Wahpeton Expansion Project Area

State/County	Population (2020) [a]	Average Per Capita Income (dollars) [b]	Civilian Labor Force [c]	Unemployment Rate 2021 (%) [b]	Top Three Employment Sectors [d]
North Dakota	779,094	36,062	395,987	2.3	G, H, R
Cass County	184,525	37,620	115,422	2.9	H, G, R
Richland County	16,529	31,346	7,341	1.9	O, M, E

[a] US Census Bureau, 2021a.

[b] United States Census Bureau, 2021a; NDLMI, 2021. The labor force includes all people classified in the civilian labor force, plus active duty members of the military. The civilian labor force consists of people classified as employed or unemployed. Excluded are people 16 years old and over who are not actively looking for work—such as students, homemakers, retired workers, seasonal workers who are not looking for work, institutionalized people, and people doing only incidental unpaid family work. Also excluded are working-age individuals who have stopped looking for work because they believe work is unavailable.

[c] Workers over 16 years of age. U.S. Census Bureau, 2021a.

[d] NDLMI, 2021. Government = G, Healthcare and Social Assistance = H, Retail Trade = R, Mining, Quarrying, and Oil and Gas Extraction = O, Management of Companies and Enterprises = M, and Education Services = E.

The Project area is within an approximately 1-hour drive from the center of Fargo, North Dakota. The Greater Fargo metro area is composed of the core cities Fargo, North Dakota; West Fargo, North Dakota; Moorhead, Minnesota and Dilworth, Minnesota; as well as various smaller nearby towns and suburbs in both states. While Fargo has a population in excess of 125,000, the Fargo metro area has a population in excess of 249,000 (U.S. Census Bureau, 2021a) and offers a wide variety of public services and housing options to accommodate temporary workers during construction.

The temporary relocation of the non-local portion of the workforce to the Project area would result in a nominal increase in population relative to the county populations. This increase would represent a 1.5 percent increase if the entirety of the peak workforce were non-local and all relocated to Richland County, or alternatively, a 0.1 percent increase if the entirety of the peak workforce were non-local and all relocated to Cass County. Therefore, the increase in population in the Project area would result in a temporary and minor impact. WBI Energy anticipates one new operational staff would be required for the Project, resulting in a negligible impact on population, housing, public services and transportation during operation.

4.7.1.2 Economy and Tax Revenue

Table 4.7-1 provides a summary of economic and employment conditions in the Project area. The average per capita income in the Project area ranges from $31,346 in Richland County to $37,620 in Cass County. The unemployment rates in the Project area range from 1.9 percent in Richland County to 2.9 percent in Cass County. The unemployment rate is 2.3 percent in North Dakota statewide. The top three industries in the counties crossed by the Project are government; healthcare and social assistance; retail trade; mining, quarrying, and oil and gas extraction; management of companies and enterprises; and education services.

WBI Energy estimates that payroll spending would be approximately $39.6 million for the duration of the Project. WBI Energy estimates that construction materials and supplies would be about $16.3 million. According to WBI Energy up to 5 percent of Project material purchases and construction-related expenditures would be spent locally (about $816,005).

The increase in economic activity resulting from spending during construction would result in a temporary, positive economic impact in the Project area. Overall, the Project would result in beneficial economic effects on the state and local economies by creating a short-term stimulus to the affected areas through payroll expenditures, local purchases of consumables and Project-specific materials, and sales tax.

As stated previously operation of the Project would require one new permanent job, which represents a negligible permanent impact on the local economy.

Construction and operation of the Project would result in increased tax revenues in Cass and Richland Counties. Construction activities would result in additional state and local tax revenues related to retail sales and payroll. Non-local construction workers would spend money locally on housing, transportation, food, and entertainment. WBI Energy estimates that construction activities associated with the Project would generate approximately $979,205 in state tax revenue.

Ad valorem, or property taxes, would also increase tax revenues in the counties crossed by the Project. WBI Energy estimates that the total annual ad valorem tax for the Project would be about $242,508 (about $99,007 for Cass County and $143,501 for Richland County). These taxes would be paid for the life of the Project.

Construction activities would increase tax revenue in the states and counties crossed by the Project. Expenditures on material and equipment by construction would also generate additional tax revenues, which would have a minor, temporary, and positive impact on local and state economies. Annual ad valorem taxes would have a long-term positive impact on county economies.

4.7.1.3 Housing

Table 4.7-2 provides a summary of available housing in the Project area.

TABLE 4.7-2

Available Housing in the Wahpeton Expansion Project Area

State/County	Total Housing Units [a]	Rental Vacancy Rate (%) [b]	Vacant Housing Units [b]	Hotels and Motels [c]	Campgrounds/RV Parks [d]
North Dakota	**376,597**	**13**	**48,089**	--	--
Cass County	83,604	8	6,725	58	4
Richland County	7,761	10.5	791	5	3

[a] United States Census Bureau, 2021b.
[b] United States Census Bureau, 2021c.
[c] NDHFA, 2020. Specific information on vacant housing statistics is not available in more recent U. S. Census data provided in the American Community Survey 2016–2020, 5-year Estimates.
[d] Hotel and motels in Fargo, ND and Wahpeton, ND. North Dakota Tourism Division, 2022; Hotels.com, 2022.
[e] North Dakota Tourism Division, 2022.

The cities of Fargo and Wahpeton, North Dakota have about 63 hotels/motels totaling 5,097 rooms (North Dakota Tourism Division, 2022; Hotels.com, 2022). The seven RV parks and campgrounds

identified in the Project area have about 180 full hook-up sites (North Dakota Tourism Division, 2022). According to the U.S. Census Bureau, 7,516 vacant housing units are available in the Project area. WBI Energy estimates construction activities would require an average of 175 workers and a maximum of 225 workers at any one time over the course of a 7-month period, and a majority of the total workforce would temporarily relocate to the Project area. Based on the availability of local rental properties, hotels/motels, campgrounds, and RV parks, the increased demand for short-term housing from non-local construction workers during construction would be temporary and minor. One permanent position would be required for operation of the facilities proposed for the Project; therefore, long-term effects on housing are also not anticipated.

4.7.1.4 Public Services

A range of public services and facilities are available in the Project area. Services and facilities include hospitals, full-service law enforcement, paid and volunteer fire departments, and public schools. Table 4.7-3 provides an overview of select public services available for the counties crossed by the Project.

TABLE 4.7-3

Public Services in the Wahpeton Expansion Project Area

County	Hospitals /Medical Clinics [a]	Nearest Distance to Project (miles)	Fire Departments[c]	Nearest Distance to Project (miles)	Police Departments[d]	Nearest Distance to Project (miles)
Cass County	7	3.5	4	4.8	3	5.7
Richland County	1 [b]	1	1	4.8	1	4

[a] North Dakota Department of Health, 2022.
[b] No hospitals are located in Richland County. The closest hospital is St. Francis Medical Center in Breckinridge, Minnesota.
[c] USA Fire & Rescue, 2022.
[d] USA Cops, 2022.

The non-local workforce would be relatively small compared to the current populations in areas affected by the Project, and no major impacts on the availability of public services are anticipated. As indicated in table 4.7-3, there are multiple local fire departments, police departments, and medical facilities near each piece of the Project that could handle emergencies should they arise. Due to the relatively small number of workers required for the Project and the unlikelihood that they may bring families with children to the area for a short construction period, we do not anticipate an impact on local schools. In addition, any temporary increase in population would be distributed throughout the general area of the Project and would not have a permanent impact on public services in any one location.

Temporary increased demand on local public services may occur including the need for local police to direct traffic during construction and for local emergency services to respond to emergencies associated with Project construction and associated temporary increase in population. Fire departments may have to respond to Project-related fires or other emergencies associated with the temporary increase in population, and medical services may be necessary for workforce personnel illnesses or injuries. WBI Energy would work with local law enforcement, fire departments, and emergency medical services prior to construction to coordinate for effective emergency response (see also section 4.10). Given the minimal requirements for new operational workforce, we conclude no impacts on public services would occur during operation of the Project.

4.7.1.5 Tourism

Tourism opportunities include federal, state, and local interest areas; historic sites and museums; food and drink; outdoor recreation opportunities; and water-based recreational activities. Recreation and special interest areas are discussed in detail in section 4.5.

Tourist attractions within the Project area include casinos, museums, historic buildings, water parks, farmer's markets. Popular recreational activities include auto racing, indoor sports, swimming, fishing, boating, camping, hiking, golfing, mountain biking, picnicking, bird watching, hunting, off-highway vehicle use, horseback riding, snowshoeing, cross-country skiing, and snowmobiling. The Project would not cross any public recreational lands or significant tourist attractions. The Tewaukon Wetland Management District; which provides recreational activities such as hunting, fishing, wildlife watching, and photography; is less than 0.1 mile west of MP 35. The Project would parallel the North Country National Scenic Trail for about 2.8 miles and cross the trail at MP 42.4 via a guided bore. As stated in section 4.5.3, WBI Energy has committed to coordinating with the NPS and North Country Trail Association about the timing of construction, proper signage that would be installed, and additional safety measures so the trail would be accessible during construction. Since the North Country Trail would be crossed via guided bore, use restrictions are not anticipated. Following construction, WBI Energy would restore areas to preconstruction conditions.

The influx of an average of about 225 non-local construction workers would be limited to the 7-month duration of construction. As stated previously, the demand for temporary housing by non-local workers is not expected to exceed the available number of rental units, hotels, motels, and campgrounds in the Project area, but accommodations in the Project area could experience some minor limited availability during peak tourism season.

As detailed in section 4.5, WBI Energy has proposed general mitigation measures for recreation and special interest areas that would be affected by the Project (e.g., public notification protocols), and provided crossing plans completed in consultation with the applicable land management agency.

Based on WBI Energy's proposed measures to reduce impacts on recreational areas, thereby reducing impacts on the tourism industry, the Project would not result in significant or adverse impacts on recreational or special interest areas in the Project area. Given the short timeframe for construction, the Project would result in minor, temporary impacts to tourism in the Project area.

4.7.1.6 Traffic and Transportation

The local road and highway systems in the general area of the Project consist of interstate highways, state highways, county roads, local roads, and private roads. The primary roadways that would be utilized by Project would be I-29 and I-94 and State Highways 18, 38, and 46 in Cass County and I-29 and State Highways 11, 13, 18, 27 46, and 127 in Richland County. Table 4.7-4 identifies average daily trips expected during construction.

Construction of the Project could result in minor, short-term impacts along some roads and highways due to the movement and delivery of equipment, materials, and workers. It is estimated that there would be a maximum of 396 trips per day during the peak of construction.

TABLE 4.7-4

Estimated Average Daily Trips During Construction of the Wahpeton Expansion Project

Project Facility	Construction and Delivery Vehicles	Construction Personnel Vehicles	Estimated Duration of Construction	Estimated Trips Per Day Per Vehicle	Estimated Total Trips Per Day
Pipeline	23	175	7 months	2	396
Mapleton Compressor Station	3	8	8 days	2	20
MDU-Wahpeton Border Station	6	15	30 days	2	42
MDU-Kindred Border Station	6	15	30 days	2	42

Daily commuting of the construction workforce to the general Project area could temporarily affect traffic. WBI Energy anticipates construction crews would travel outside of peak travel times, limiting some effect on local commuters. According to WBI Energy, some workers may carpool thereby reducing the total number of trips.

WBI Energy would utilize flagmen and signage to alert motorists of Project activities and detours, where needed, and follow traffic control measures (e.g., weight and speed limits) to ensure the safety of construction personal and motorists. Additionally, WBI Energy would acquire necessary permits for construction-related impacts on roadways and would repair all access roads to preconstruction conditions or better after construction activities have been completed.

Given these measures, the nominal construction workforce, current road capacities, and estimate of a single hire for operation of the Project, we conclude impacts on transportation would be temporary, minor, and not significant.

4.7.2 Environmental Justice

According to the EPA, "Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies (EPA, 2021). Meaningful involvement means:

1. people have an opportunity to participate in decisions about activities that may affect their environment and/or health;
2. the public's contributions can influence the regulatory agency's decision;
3. community concerns will be considered in the decision-making process; and
4. decision makers will seek out and facilitate the involvement of those potentially affected (EPA, 2021).

In conducting NEPA reviews of proposed natural gas projects, the Commission follows the instruction of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, which directs federal agencies to identify and address the

"disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities).[13] Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad,* also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[14] The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution.[15] Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples.[16]

Commission staff used the Federal Interagency Working Group on Environmental Justice and NEPA Committee's publication, *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*) (EPA, 2016), which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this Project. Commission staff's use of these methodologies is described throughout this section.

Commission staff used EJScreen 2.0 as an initial step to gather information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors. EPA recommends that screening tools, such as EJScreen 2.0, be used for a "screening-level" look and a useful first step in understanding or highlighting locations that may require further review.

4.7.2.1 Meaningful Engagement and Public Involvement

The CEQ *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ, 1997) and *Promising Practices* recommend that Federal agencies provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices.[17] They also recommend using adaptive approaches to overcome linguistic, institutional, cultural, economic, historical, or other potential barriers to effective participation in the decision-making processes of Federal agencies. In addition, Section 8 of Executive Order 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, strongly encourages independent agencies to "consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, federal policies and programs."

As discussed in section 1.3 of this EIS, there have been many opportunities for public involvement during the Commission's environmental review process. On September 22, 2021, WBI Energy filed a request to implement the Commission's Pre-filing Process for the Wahpeton Expansion Project. At that time, WBI Energy was in the preliminary design stages of the Project and no formal application had been filed. FERC established its Pre-filing Process to encourage early involvement of interested stakeholders, facilitate interagency cooperation and identify and resolve environmental issues before an application is filed with FERC and facility locations are formally proposed. FERC granted WBI Energy's request to use the Pre-filing Process on September 27, 2021, and established pre-filing Docket No. PF21-4-000 for the Project. During the Pre-filing Process, we worked with WBI Energy and stakeholders to identify and resolve issues, where possible, prior to WBI Energy's filing of a formal application with FERC.

13 Exec. Order No. 12,898, 59 Fed. Reg. 7629, at 7629, 7632 (Feb. 11, 1994).
14 Exec. Order No. 14,008, 86 Fed. Reg. 7619, at 7629 (Jan. 27, 2021).
15 Id.
16 See EPA, EJ 2020 Glossary (Aug 22, 2022), https://www.epa.gov/environmentaljustice/ej-2020-glossary.
17 1997 CEQ Guidance, p. 4.

On January 4, 2022, we issued a *Notice of Scoping Period Requesting Comments on Environmental Issues for the Planned Wahpeton Expansion and Notice of Virtual Public Scoping Sessions* which opened a 30-day scoping period which ended on February 3, 2022. This notice was mailed to about 366 entities, including affected landowners (as defined in the Commission's regulations): federal, state, and local officials; Native American tribes; agency representatives; environmental and public interest groups; and local libraries and newspapers. We conducted two virtual public scoping sessions to provide an opportunity for agencies and the general public to learn more about the Project and to participate in the environmental analysis by identifying issues to be addressed in either an Environmental Assessment or an Environmental Impact Statement. The virtual scoping sessions were held via phone on January 25 and January 27, 2022.

On June 10, 2022, FERC issued a NOA announcing that WBI Energy filed its application with FERC. The NOA opened another 30-day comment period and indicated that the deadline for filing a motion to intervene was July 1, 2022. On June 22, 2022, FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Wahpeton Expansion Project, Request for Comments on Environmental Issues, and Schedule for Environmental Review*. This notice was published in the FR and sent to 400 parties, including federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; local libraries and newspapers; and other stakeholders who had indicated an interest in the Wahpeton Expansion Project.

In addition to the notices that FERC mailed to landowners and other stakeholders throughout the environmental review process, WBI Energy hosted landowner informational meetings for Project stakeholders in Wahpeton and Kindred in September 2021. According to WBI Energy, additional outreach included: open house announcement and schedule, which was mailed to affected parties, including all affected landowners and other municipality and county leaders; newspaper advertisements of open houses placed in newspapers of general circulation in the Project area; a Project toll-free telephone number for public inquiries; and a Project website with periodic updates of relevant information.

WBI Energy held in-person informational open house meetings on November 16 and 17, 2021. The open houses were designed to inform the public about the Project, enable the public to view maps of the Project, and provide the public the opportunity to ask questions about the Project. According to WBI Energy, the open house schedule was mailed to all affected parties, and newspaper advertisements of the open houses were placed in newspapers of general circulation in the Project area. Forty-five people attended the open houses. FERC staff participated virtually in both open houses.

WBI Energy would continue to inform the public and agencies through its Project website, phone number, written correspondence, and through public notices about various construction-related activities as well as through reporting commitments and requirements, and environmental measures to address issues (e.g., non-compliances and landowner complaints). If the Project is approved, WBI Energy would continue to maintain relationships and communication with stakeholders after the in-service date.

All documents that form the administrative record for this proceeding, with the exclusion of privileged or critical energy infrastructure information, are available to the public electronically on the FERC's website (www.ferc.gov). Anyone may comment to FERC about the Project, either in writing or electronically. All substantive environmental comments received prior to issuance of this EIS have been addressed within this document.

Regarding future engagement and involvement, in 2021, the Commission established the Office of Public Participation (OPP) to support meaningful public engagement and participation in Commission proceedings. OPP provides members of the public, including environmental justice communities, landowners, Tribal citizens, and consumer advocates, with assistance in FERC proceedings—including navigating Commission processes and activities relating to the Project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable deadlines for

such filings, members of the public are encouraged to contact OPP directly at 202-502-6592 or OPP@ferc.gov for further information.

We recognize that not everyone has internet access or is capable of filing electronic comments. For this reason, each notice was physically mailed to all parties (i.e., landowners and abutters, federal, state, and local government representatives and agencies; local libraries; newspapers; elected officials; Native American tribes; and other interested parties) on the environmental mailing list. Further, Commission staff has consistently emphasized in public meetings that all comments, whether spoken or delivered in person at meetings, mailed in, or submitted electronically, receive equal weight by FERC staff for consideration in the EIS. In response to our information request, on August 19, 2022, WBI Energy provided a mailing list of environmental justice stakeholders. We have added these stakeholders to our mailing list for the Project.

FERC received comments from the EPA during the scoping period. EPA recommended that the EIS (1) identify communities living with or vulnerable to environmental justice concerns within the geographic scope of the impact area; (2); assess impacts on communities with environmental justice concerns in light of past, present, and cumulative baseline environmental impacts; (3) assess the potential for the Project to add to existing impacts and cause disproportionately high and adverse human health or environmental impacts; (4) disclose mitigation measures or alternatives to avoid or reduce any potentially disproportionate adverse impacts. Environmental justice communities are identified in section 4.7.2.2. Impacts on environmental justice communities are discussed in section 4.7.2.3, and mitigation measures are in section 4.7.2.4. The EPA also commented that the Commission should document meaningful engagement with communities regarding Commission decisions on the Project. Community engagement activities were previously described in this section.

4.7.2.2 Identification of Environmental Justice Communities

According to the CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ, 1997) and *Promising Practices*, minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in *Promising Practices*, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EIS where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population of the block group affected 10 percent higher than the aggregate minority population percentage in the county. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* **low-income threshold criteria** method, low-income populations are identified as block groups where the percent of low-income populations in the identified block group is equal to or greater than that of the county. Here, Commission staff selected Cass and Richland Counties, North Dakota, as the comparable reference community to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

According to the current U.S. Census Bureau information, minority and low-income populations exist within the Project area, as discussed further below. Table 4.7-5 identifies the minority populations by race and ethnicity and low-income populations of North Dakota, the counties affected by the Project (Cass County and Richland County), and U.S. Census block groups[18] crossed by the pipeline and associated minor aboveground appurtenant facilities and within 1 mile of the proposed compressor station and border stations. We have determined that a 1-mile radius around the proposed compressor station and border

[18] Block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people (U.S. Census Bureau, 2022)

stations is the appropriate unit of geographic analysis for assessing impacts for this Project on environmental justice communities. A 1-mile radius is sufficiently broad considering the likely concentration of construction activities, noise, visual, and traffic impacts proximal to the aboveground facilities, and operational emissions. To ensure we are using the most recent available data, we used the U.S. Census American Community Survey[19] File# B03002 as the source for race and ethnicity data, File# B17017 as the source for poverty data at the census block group level. Figure 4.7-1 provides a geographic representation of potential environmental justice communities relative to the location of the Project.

As presented in table 4.7-5, five block groups out of the 10 within the geographic scope of the Project are considered environmental justice communities. Four[20] of the five block groups have a minority population that either exceeds 50 percent or is meaningfully greater than their respective counties. The remaining identified block group[21] has a minority population that exceeds 50 percent or is meaningfully greater than their respective counties and a low-income population that is equal to or greater than its respective county.

For the pipeline, two block groups[22] (based on the minority threshold) are considered environmental justice block groups; for aboveground facilities (i.e., the 1-mile radius around the existing Mapleton Compressor Station & Block Valve 1) one block group[23] (based on the minority threshold) is considered an environmental justice block group; for the nighttime guided bore locations (MP 1.23, 5.94, 40.97) two block groups[24] (based on the minority threshold) are considered environmental justice block groups; and for the contractor yards (Kost, Comstock North, Wahpeton City, and Comstock South Yards) three block groups[25] (two based on the minority threshold and one based on both the low-income and minority threshold) are considered environmental justice block groups.

19 U.S. Census Bureau, American Community Survey 2019 ACS 5-Year Estimates Detailed Tables, File# B17017, Poverty Status in the Past 12 Months by Household Type by Age of Householder, https://data.census.gov/cedsci/table?q=B17017; File #B03002 Hispanic or Latino Origin By Race, https://data.census.gov/cedsci/table?q=b03002.

20 Census Tract 040800, Block Group 2; Census Tract 040800, Block Group 3; Census Tract 0970700, Block Group 2; and Census Tract 0970900, Block Group 1.

21 Census Tract 0971000, Block Group 2.

22 Census Tract 040800, Block Group 3 and Census Tract 0971000, Block Group 2.

23 Census Tract 040800, Block Group 3.

24 Census Tract 040800, Block Group 3 and Census Tract 0971000, Block Group 2.

25 Census Tract 040800, Block Group 2; Census Tract 0970900, Block Group 1; and Census Tract 0971000, Block Group 2.

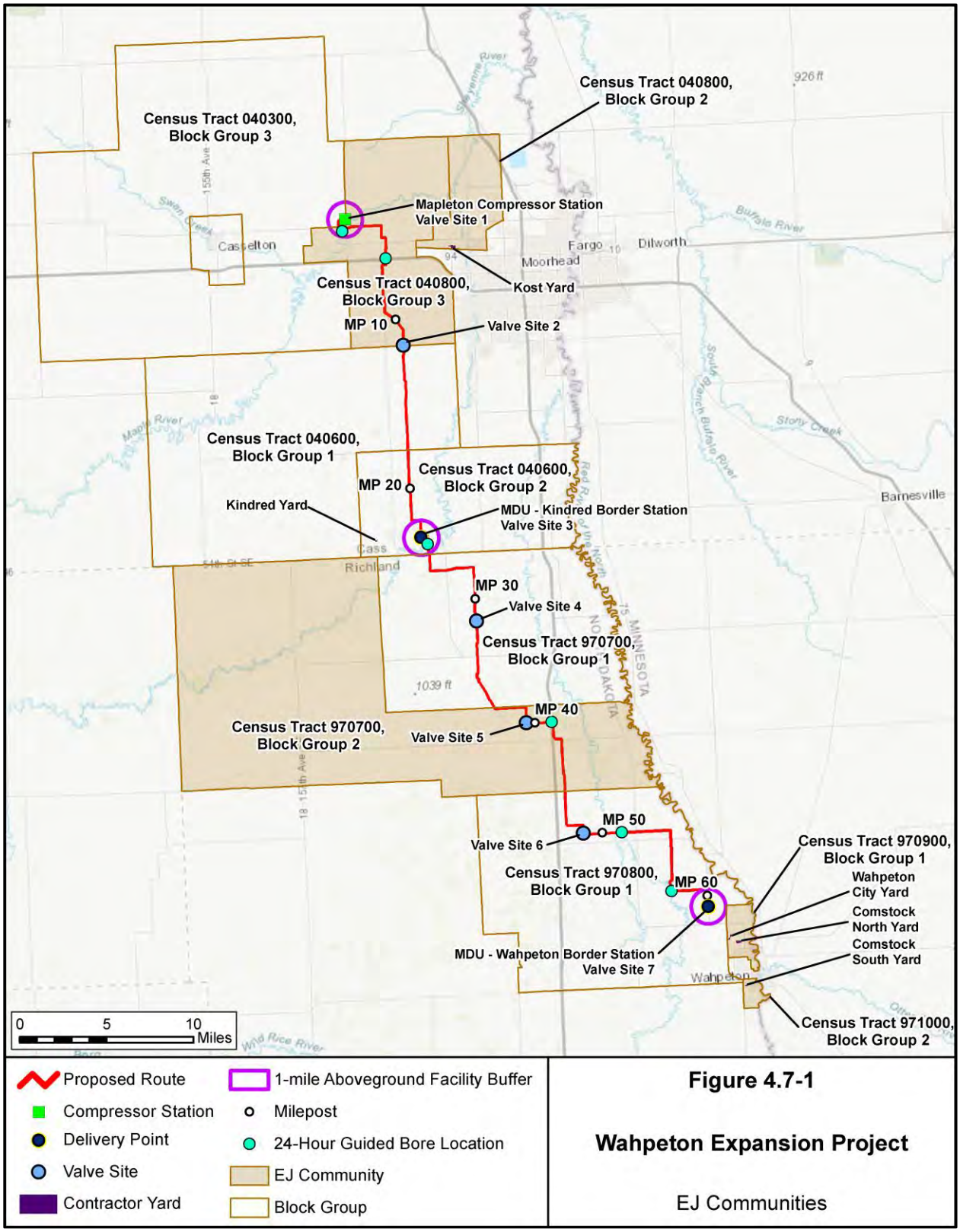
Census Tract 040300,
Block Group 3
Census Tract 040800,
Block Group 2
Mapleton Compressor Station
Valve Site 1
Kost Yard
Census Tract 040800,
Block Group 3
MP 10
Valve Site 2
Census Tract 040600,
Block Group 1
MP 20
Census Tract 040600,
Block Group 2
Kindred Yard
MDU - Kindred Border Station
Valve Site 3
MP 30
Valve Site 4
Census Tract 970700,
Block Group 1
MP 40
Census Tract 970700,
Block Group 2
Valve Site 5
MP 50
Valve Site 6
Census Tract 970800,
Block Group 1
MP 60
Census Tract 970900,
Block Group 1
Wahpeton
City Yard
Comstock
North Yard
Comstock
South Yard
MDU - Wahpeton Border Station
Valve Site 7
Census Tract 971000,
Block Group 2
Casselton
Fargo
Moorhead
Dilworth
Barnesville
Wahpeton
Cass
Richland
0 5 10 Miles
Proposed Route
Compressor Station
Delivery Point
Valve Site
Contractor Yard
1-mile Aboveground Facility Buffer
Milepost
24-Hour Guided Bore Location
EJ Community
Block Group
Figure 4.7-1
Wahpeton Expansion Project
EJ Communities

TABLE 4.7-5

Minority [a] Populations by Race and Ethnicity and Low-income Populations in the Project Area

State/County/Tract and Block Group	Total Population	RACE AND ETHNICITY COLUMNS: White Alone Not Hispanic or Latino (%)	African American or Black (%)	Asian (%)	Native American / Alaska Native (%)	Native Hawaiian or Other Pacific Islander (%)	Hispanic or Latino (%)	Some Other Race (%)	Two or more races (%)	LOW-INCOME COLUMN: Total Minority (%)[c]	Below Poverty Level (%)[c]
North Dakota	**760,394**	**84.4**	**2.9**	**1.4**	**5.1**	**0.11**	**0.13**	**2.2**	**3.7**	**15.6**	**11.4**
Cass County, ND	**179,937**	**85.4**	**5.5**	**2.9**	**0.9**	**0.02**	**0.07**	**2.5**	**2.7**	**14.6**	**11.4**
Richland County, ND	**16,245**	**91.3**	**0.7**	**0.4**	**1.8**	**0.00**	**0.02**	**2.7**	**3.1**	**8.7**	**15.1**
Pipeline (Cass County, ND)											
Census Tract 040300, Block Group 3	876	99.2	0.2	0.0	0.0	0.00	0.00	0.0	0.6	0.8	0.3
Census Tract 040600, Block Group 1	1,203	94.3	0.0	0.0	0.2	0.00	0.17	0.8	4.6	5.7	6.0
Census Tract 040600, Block Group 2	1,851	96.5	0.0	0.0	1.2	0.65	0.00	0.2	1.5	3.5	2.0
Census Tract 040800, Block Group 3[d]	1,508	83.2	6.9	0.0	0.4	0.00	0.00	3.6	5.9	16.8	0.9
Pipeline (Richland County, ND)											
Census Tract 970700, Block Group 1[d]	995	95.7	0.0	0.0	0.0	0.00	0.00	3.7	0.6	4.3	4.2
Census Tract 970700, Block Group 2	1,119	88.4	0.3	0.0	0.1	0.00	9.38	0.5	1.3	11.6	3.6
Census Tract 970800, Block Group 1	1,276	98.5	0.0	0.0	0.2	0.00	0.00	0.2	1.2	1.5	4.7
Existing Mapleton Compressor Station, Block Valve 1 (Cass County, ND)											
Census Tract 040300, Block Group 3[b]	876	99.2	0.2	0.0	0.0	0.00	0.00	0.0	0.6	0.8	0.3
Census Tract 040800, Block Group 3[d]	1,508	83.2	6.9	0.0	0.4	0.00	0.00	3.6	5.9	16.8	0.9
MDU-Kindred Border Station & Block Valve 3 (Cass County, ND and Richland County, ND)											
Census Tract 040600, Block Group 2 (Cass County, ND)[b]	1,851	96.5	0.0	0.0	1.2	0.65	0.00	0.2	1.5	3.5	2.0

TABLE 4.7-5

Minority [a] Populations by Race and Ethnicity and Low-income Populations in the Project Area

State/County/Tract and Block Group	Total Population	RACE AND ETHNICITY COLUMNS: White Alone Not Hispanic or Latino (%)	African American or Black (%)	Asian (%)	Native American / Alaska Native (%)	Native Hawaiian or Other Pacific Islander (%)	Hispanic or Latino (%)	Some Other Race (%)	Two or more races (%)	LOW-INCOME COLUMN: Total Minority (%)[c]	Below Poverty Level (%)[c]
Census Tract 970700, Block Group 1[d] (Richland County, ND)	995	95.7	0.0	0.0	0.0	0.00	0.00	3.7	0.6	4.3	4.2
Nighttime Guided Bore at MP 24.15 9 (Cass County, ND)											
Census Tract 040600, Block Group 2	1,851	96.5	0.0	0.0	1.2	0.65	0.00	0.2	1.5	3.5	2.0
Nighttime Guided Bores at MP 1.23 and 5.94 (Cass County, ND)											
Census Tract 040800, Block Group 3[d]	1,508	83.2	6.9	0.0	0.4	0.00	0.00	3.6	5.9	**16.8**	0.9
Kindred Contractor Yard (Cass County, ND)											
Census Tract 040600, Block Group 2	1,851	96.5	0.0	0.0	1.2	0.65	0.00	0.2	1.5	3.5	2.0
Kost Contractor Yard (Cass County, ND)											
Census Tract 040800, Block Group 2	2,167	80.6	8.6	0.5	0.1	0.00	0.00	2.7	7.6	**19.4**	4.8
MDU-Wahpeton Border Station & Block Valve 7 (Richland County, ND)											
Census Tract 970800, Block Group 1	1,276	98.5	0.0	0.0	0.2	0.00	0.00	0.2	1.2	1.5	4.7
Nighttime Guided Bores at MP 51.10 and 57.57 (Richland County, ND)											
Census Tract 970800, Block Group 1	1,276	98.5	0.0	0.0	0.2	0.00	0.00	0.2	1.2	1.5	4.7
Nighttime Guided Bore at MP 40.97 (Richland County, ND)											
Census Tract 970700, Block Group 2	1,119	88.4	0.3	0.0	0.1	0.00	9.38	0.5	1.3	**11.6**	3.64
Comstock North and Wahpeton City Contractor Yards (Richland County, ND)											
Census Tract 970900, Block Group 1	1,688	84.1	0.0	0.0	1.0	0.00	0.00	7.9	7.0	**15.9**	10.4

TABLE 4.7-5

Minority [a] Populations by Race and Ethnicity and Low-income Populations in the Project Area

State/County/Tract and Block Group	Total Population	RACE AND ETHNICITY COLUMNS: White Alone Not Hispanic or Latino (%)	African American or Black (%)	Asian (%)	Native American / Alaska Native (%)	Native Hawaiian or Other Pacific Islander (%)	Hispanic or Latino (%)	Some Other Race (%)	Two or more races (%)	LOW-INCOME COLUMN: Total Minority (%)[c]	Below Poverty Level (%)[c]
Comstock South Contractor Yard (Richland County, ND)											
Census Tract 971000, Block Group 2	1,638	88.2	2.2	0.0	0.0	0.00	0.00	3.1	6.5	**11.8**	**26.0**

[a] "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.
[b] Facility is located within this block group.
[c] Minority or low-income populations exceeding the established thresholds are indicated in red, bold type and blue shading.
[d] Block group is within the geographic scope for multiple facilities.

4.7.2.3 Impacts on Environmental Justice Communities

As previously described, *Promising Practices* provides methodologies for conducting environmental justice analyses. Issues considered in the evaluation of environmental justice include human health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors. Consistent with *Promising Practices* and our understanding of Executive Order 12898, we reviewed the Project to determine if its resulting impacts would be disproportionately high and adverse on minority and low-income populations and also whether impacts would be significant.[26] *Promising Practices* provides that agencies can consider any of a number of conditions for determining whether an action will cause a disproportionately high and adverse impact.[27] The presence of any of these factors could indicate a potential disproportionately high and adverse impact. For this Project, a disproportionately high and adverse effect on an environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations include the location of Project facilities and the Project's human health and environmental impacts on identified environmental justice communities, including direct, indirect and cumulative impacts. The EPA recommended that the EIS include impacts on environmental justice communities from the Project. The analysis of impacts is included in this section.

Project work within the identified environmental justice communities includes the construction and operation of portions of the pipeline (MPs 0.7 to 11.7 and MPs 36.7 to 45.3) including Block Valves 2 and 5[28] and associated pig launcher/receivers; nighttime guided boring at MPs 1.23, 5.94, and 40.97[29]; and use of the Kost, Comstock North, Wahpeton City, and Comstock South Yards[30]. The existing Mapleton Compressor Station and new Block Valve 1 and associated pig launcher/receiver would not be within an environmental justice community, but an environmental justice community is within a 1-mile radius of these facilities.

Impacts on the natural and human environment from construction and operation of Project facilities are identified and discussed throughout this document. Factors that could affect environmental justice communities include, groundwater impacts (see section 4.3), visual impacts (see section 4.5), socioeconomic impacts, including traffic impacts (see section 4.7) and increased demand for temporary housing and public services (see section 4.7), and air and noise impacts from construction and operation (see sections 4.8 and 4.9). Potentially adverse environmental effects on surrounding communities associated with the Project, including environmental justice communities, would be minimized and/or mitigated. In general, the magnitude and intensity of the aforementioned impacts would be greater for individuals and residences closest to the Project's facilities and would diminish with distance. These impacts are addressed in greater detail in the associated sections of this EIS. Environmental justice concerns are not present for other resource areas such as geology, wetlands, wildlife, or cultural resources due to the minimal overall impact the Project would have on these resources.

Groundwater Resources

Construction could physically damage water supply wells or diminish the yield and water quality of wells and springs within 150 feet of construction workspaces. One water well at MP 9.3 was identified

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26 See Promising Practices at 33 (stating that "an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA" and in other circumstances "an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA").

27 See Promising Practices at 45-46 (explaining that there are various approaches to determining whether an impact will cause a disproportionately high and adverse impact). We recognize that CEQ and EPA are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

28 Census Tract 040800, Block Group 3 and Census Tract 0971000, Block Group 2.

29 Census Tract 040800, Block Group 3 and Census Tract 0971000, Block Group 2.

30 Census Tract 040800, Block Group 2; Census Tract 0970900, Block Group 1; and Census Tract 0971000, Block Group 2.

within 150 feet of Project facilities and is in an environmental justice community. The potential to impact wells and springs would be reduced through implementation of WBI Energy's Plan and Procedures, its SPCC Plan, and other best management practices designed to minimize erosion and protect environmental resources. In addition, wells and springs within workspaces would be marked and protected to prevent construction-related damage, and pre- and post-construction testing of well yield and water quality on wells within 150 feet would be conducted with landowner permission. In the unlikely event that a well or spring is affected, WBI Energy would arrange for a temporary water supply until the water supply and quality are restored, or otherwise resolved. With implementation of these mitigation measures, impacts on environmental justice communities associated with groundwater and well impacts would be less than significant. Groundwater impacts are more fully addressed in section 4.3.1.

Visual Resources

Temporary visual impacts would occur during construction of the pipeline and aboveground facilities and guided bore crossings, including vehicle and equipment movement, vegetation clearing and grading, trench and foundation excavation, pipe storage, and spoil piles. Permanent visual impacts may occur along the pipeline right-of-way from periodic vegetation clearing to allow for visual pipeline inspection.

Modifications to the existing Mapleton Compressor Station, including new Block Valve 1 and associated pig launcher/receiver facilities (which would be constructed within the fence line of the existing compressor station), would be within 1 mile of an environmental justice community (Census Tract 040800, Block Group 3). The nearest residence (about 1,000 feet northeast) is within an environmental justice community (Census Tract 040800, Block Group 3). Screening does not currently exist between the existing Mapleton Compressor Station and the nearest residence, and the station is visible to the nearest residence. The closest non-residential sensitive receptor within an environmental justice community would be a park about 1.3 miles to the south. An existing housing development around the park shields park visitors from views of the compressor station. The existing station may be visible to other residences in the area, but the proposed modifications would be consistent with the scale of the existing facility. Therefore, visual impacts on environmental justice communities from modifications to the existing Mapleton Compressor Station would be less than significant.

The Project would parallel the North Country National Scenic Trail for about 2.8 miles and cross the trail at MP 42.4 via a guided bore. The North Country National Scenic Trail is about 1.1 miles south of proposed Block Valve 5 and associated pig launcher/receiver. According to WBI Energy, Block Valve 5 may be visible from the trail. No visual screening is proposed. However, due to the distance and small footprint of the block valve, visual impacts on environmental justice communities from Block Valve 5 and associated pig launcher/receiver would be less than significant.

Minimal visual impacts would result from use of four contractor yards. Contractor yards; Kost, Comstock North, Wahpeton City, and Comstock South; would be within environmental justice communities (Census Tract 040800, Block Group 2; Census Tract 970900, Block Group 1; and Census Tract 971000, Block Group 2, respectively). Visual impacts on environmental justice communities would be temporary and would include the presence and storage of heavy machinery/earthmoving equipment, lengths of pipe, materials for the border stations, as well as staff and vehicles necessary for transporting these elements. The Kost Yard would be located on a parcel in the western section of West Fargo, North Dakota, over 0.5 mile from the closest residence. This parcel is surrounded by industry, warehousing, and commercial activities on all sides. The Comstock North Yard would be surrounded by a hardware business to the south and agricultural fields on all other sides. The nearest residence is about 300 feet from the Comstock North Yard site. The Wahpeton City Yard would be bordered by an agricultural field to the north and existing businesses (plywood supplier, manufacturing, and hardware) to the east, south, and west. The Comstock South Yard would be in an area of industrial buildings, and according to WBI Energy and

historical aerial imagery the site appears to have been previously used for industrial purposes. The contractor yards would only be utilized during construction (generally Monday through Saturday from 7 a.m. to 7 p.m. for about 7 months) and would be restored at the end of the Project. Visual impacts on environmental justice communities from the contractor yards would be less than significant. Visual impacts are more fully addressed in section 4.5.

Socioeconomics

Project impacts on environmental justice populations may include impacts on socioeconomic factors. Constructing the Project would require about 225 workers at its peak. WBI Energy estimates that the majority of its construction workforce would temporarily relocate to the Project area; therefore, 225 workers would increase the population of the two county Project area total by about 0.25 percent. The temporary flux of workers into environmental justice communities could increase the demand for community services, such as housing, police enforcement, and medical care. An influx of workers could also affect economic conditions by having beneficial impacts on employment and local tax revenue. Socioeconomic impacts on the environmental justice community would be less than significant. Socioeconomic impacts are more fully addressed throughout section 4.7.

Traffic

Potential impacts on the environmental justice communities during construction of the Project may also include traffic delays. There would be a temporary increase in use of area roads by heavy construction equipment and associated trucks and vehicles. Area residents may be affected by minor traffic delays during construction of the Project (an average of 396 trips [maximum] per day during the peak of construction on nearby roadways). Increased use of these roads would result in a higher volume of traffic, increased commute times, and greater risk of vehicle accidents. These impacts would adversely affect local residents residing in environmental justice communities. However, these impacts would be limited to periods of active construction over the course of a 7-month construction period. Further, given that WBI Energy estimates only one new permanent employee following construction, our analysis determined that operating the Project would not substantially increase traffic on local roads. As stated above, WBI Energy would utilize flagmen and signage to alert motorists of Project activities and detours, where needed, and follow traffic control measures (e.g., weight and speed limits) to ensure the safety of construction personal and motorists. Because traffic would only increase temporarily during construction, traffic impacts on environmental justice communities would be less than significant. Project transportation needs and impacts are more fully addressed in section 4.7.1.6.

Air Quality

Construction air emissions from the Project, when considered with current background concentrations, would be below the National Ambient Air Quality Standards (NAAQS), which are designated to protect public health. Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the Project area. Construction emissions in the form of particulate matter (e.g., dust) would occur, and construction emissions from equipment exhaust would result in short-term, localized impacts in the immediate vicinity of construction workspaces. To mitigate exhaust and dust emissions during construction, vehicles and equipment would use gasoline or diesel fuel compliant with current federal regulations and would only operate with required emission control devices. WBI Energy would also implement a *Fugitive Dust Control Plan* during construction. This plan, discussed further in section 4.8, includes mitigation measures, such as reducing vehicle and equipment speed in construction work areas and on access roads to account for adverse weather conditions (e.g., high wind velocities, dry soil conditions, etc.).

As discussed in section 4.8, operational emissions would be limited to fugitive emissions. No compression or other aboveground equipment such as dehydrators, generators, line heaters, or other

combustion equipment are part of the Project and, therefore, there would be no emissions from these other sources. Results of the cumulative air quality modeling showed that the facilities would not cause or significantly contribute to an exceedance of the NAAQS and would not result in a significant impact on air quality in the region. Therefore, the Project would not have significant adverse air quality impacts on low income or minority populations. Although the Project would be in compliance with the NAAQS, and the NAAQS are designated to protect sensitive populations, we acknowledge that NAAQS attainment alone may not assure there is no localized harm to such populations due to Project emissions of VOCs, hazardous air pollutants (HAPs) as well as issues, such as the presence of non-Project-related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care.

We received environmental justice-related comments recommending that Commission staff consider climate change impacts of the proposed Project on environmental justice communities including an evaluation of impacts from the Project's GHG emissions and whether climate change may increase the vulnerability of these communities. Construction and operation of the Project would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources (including those discussed in section 4.11) and would contribute incrementally to future climate change impacts. While the climate change impacts taken individually may be manageable for certain communities, the impacts of compounded extreme events (such as simultaneous heat and drought, or flooding associated with high precipitation on top of saturated soils) may exacerbate preexisting community vulnerabilities and have a cumulative adverse impact on environmental justice communities. This EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.[31] GHG impacts are more fully addressed in section 4.8.

Noise

Noise levels above ambient conditions attributable to construction activities would vary over time and would depend upon the nature of the construction activity, the number and type of equipment operating, and the distance between sources and receptors. Nighttime guided bore activities would be conducted within environmental justice communities at MP 1.23 (Maple River), 5.94 (I-94), and 40.97 (I-29) (Census Tract 040800, Block Group 3 for MPs 1.23 and 5.94 and Census Tract 970700, Block Group 2 for MP 40.97). No noise sensitive areas (NSAs) are located within 0.5 mile of the proposed guided bore at MP 40.97. Noise-sensitive areas are located within 0.5 mile of the proposed guided bores of the Maple River and I-94. Therefore, WBI Energy completed an acoustical assessment of cumulative impacts at these locations. As discussed in section 4.9, estimated noise levels at these two locations would not exceed our threshold. The human ear's threshold of perception for noise change is considered to be 3 dBA. Construction noise related to guided bore activities would increase noise levels over ambient by about 5.4 decibels at the Maple River and 0.9 decibels at I-94. While the noise increase at the I-94 crossing would not be perceptible at the nearest residence (1,820 feet away), the noise increase at the Maple River may be noticeable at the nearest residence (1,740 feet). However, as stated above, the cumulative noise estimates for the Maple River guided bore would not exceed our threshold. In addition, any noise impacts would be temporary, lasting the duration of construction, about four to six days.

The Project would include modifications to the existing Mapleton Compressor Station to include metering and regulating equipment. Noise modeling of the existing Mapleton Compressor Station and new metering and regulating equipment estimated noise levels would be less than 55 dBA L_{dn} at the three nearby residential NSAs (3,250 feet northwest, 1,000 feet northeast, and 2,000 feet south). Operational noise would increase noise levels over ambient less than 2.9 decibels. Therefore, there would be no perceptible increase at the closest NSA to any of the facilities located within environmental justice communities. With WBI Energy's proposed mitigation measures and our recommendation in section 4.9, the Project would not

[31] See Order on Draft Policy Statements, 178 FERC ¶ 61,197 (2022).

result in significant noise impacts on local residents and the surrounding communities, which include environmental justice communities. Noise impacts are more fully addressed in section 4.9.

4.7.2.4 Environmental Justice Impact Mitigation

As described in *Promising Practices*, when an agency identifies potential adverse impacts it may wish to evaluate practicable mitigating measures. WBI Energy has committed to:

- minimizing wind erosion and fugitive dust emissions during construction through implementation of its *Fugitive Dust Control Plan*. This plan would prescribe mitigation measures such as regularly watering dusty areas, limiting activity during high winds, and other similar mitigation measures including:
    - decreasing vehicle speed to reduce dust entrainment caused by vehicle movement;
    - clean up of track-out of soils onto paved roads, typically within 48 hours;
    - watering;
    - chemical stabilization;
    - covering open-bodied trucks carrying sand, soil, or gravel; or
    - other equivalent methods or techniques approved by the EI.

Construction would generally not affect nighttime noise levels, as most activity would be limited to 7 a.m. to 7 p.m., Monday through Saturday, except for guided bore activities, and specific, limited construction activities such as tie-ins and hydrostatic testing (see section 2.2). Noise from pipeline construction would be limited to short durations over a period of 3 to 4 weeks at any one location. Guided bore noise levels could exceed 55 dBA at the Sheyenne River crossing (MP 24.15) (not an environmental justice community). WBI Energy would notify all affected landowners within 0.5 mile of the Sheyenne River guided bore prior to commencing boring activities. In addition, we recommend in section 4.9.2 that WBI Energy develop a noise mitigation plan to reduce impacts on local residents.

Cumulative

The EPA recommends we evaluate the cumulative impacts of the proposed Project on environmental justice communities. Specifically, the EPA suggests that the EIS should consider impacts from past, present, and reasonably foreseeable planned actions and consider whether communities may be experiencing existing pollution and social/health burdens and how the proposed Project may potentially result in a disproportionate impact in that context. Cumulative impacts on environmental justice communities are discussed in detail in section 4.11

4.7.2.5 Determination of Disproportionately High and Adverse Impacts on Environmental Justice Communities

As described throughout this EIS, the proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project facilities, including environmental justice populations. In conclusion, as highlighted in table 4.7-5, five block groups out of 10 block groups within the geographic scope of the Project are considered environmental justice communities.[32] As previously stated, Project work within the identified environmental justice communities includes the construction and operation of portions of the pipeline, modifications to the existing Mapleton Compressor Station; construction and operation of new Block Valves 1, 2, and 5 and associated pig launcher/receivers;

[32] Census Tract 040800, Block Group 2; Census Tract 040800, Block Group 3; Census Tract 0970700, Block Group 2; Census Tract 0970900, Block Group 1; and Census Tract 0971000, Block Group 2.

nighttime guided boring at MPs 1.23, 5.94, and 40.97; and use of the Kost, Comstock North, Wahpeton City, and Comstock South Yards. The existing Mapleton Compressor Station and new Block Valve 1 and associated pig launcher/receiver would not be within an environmental justice community, but an environmental justice community is within a 1-mile radius of these facilities. Project impacts would include temporary impacts associated with visual, traffic, air quality, and construction noise. Impacts associated with these project facilities would be predominantly borne by environmental justice communities. Impacts associated with the facilities would be less than significant.

In conclusion, aside from the insignificant impacts associated with construction and operation of portions of the pipeline, modifications to the existing Mapleton Compressor Station and new Block Valve 1; nighttime guided boring at MPs 1.23, 5.94, and 40.97; and use of the Kost, Comstock North, Wahpeton City, and Comstock South Yards, the Project would not have disproportionately high and adverse impacts on environmental justice communities.

4.8 AIR QUALITY

The Project would result in temporary impacts on local air quality through short-term construction activities; however, the Project would not result in significant, permanent impacts on local or regional air quality. Construction and operational air emissions and mitigation measures are discussed in sections 4.8.3 and 4.8.4.

4.8.1 Existing Air Quality

The EPA measures and regulates air quality by promulgating the NAAQS, which establish acceptable concentrations in the air for the six criteria pollutants. The NAAQS includes primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also includes secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. North Dakota has adopted the federal primary and secondary NAAQS along with the addition of Ambient Air Quality Standards (AAQS) for hydrogen sulfide (H_2S). The current NAAQS for these criteria pollutants that would be emitted by the Project are summarized in table 4.8-1 below, which shows the status for criteria pollutant in the counties affected by the Project.

TABLE 4.8-1

North Dakota Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Level	Form of Air Quality Standard
H_2S	Instantaneous	14,000 µg/m^3	Not to be exceeded
	1 hour	280 µg/m^3	Not to be exceeded more than once per month
	24 hour	140µg/m^3	Not to be exceeded more than once per year
	Quarter	28 µg/m^3	Not to be exceeded

µg/m^3 = micrograms per cubic meter

The NAAQS are codified in 40 CFR 50. Areas of the country are designated based on compliance with the NAAQS. Designations fall under three main categories: "attainment" (areas in compliance with the NAAQS); "nonattainment" (areas not in compliance with the NAAQS); or "unclassifiable." Unclassifiable areas are treated as attainment areas for the purpose of permitting a stationary source of pollution. Areas that have been designated nonattainment but have still demonstrated compliance with the

ambient air quality standard(s) are designated "maintenance" for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS.

4.8.2 Regulatory Requirements

The Project would be subject to various federal and state air quality requirements. The CAA, as amended in 1977 and 1990, and 40 CFR Parts 50 through 99 are the basic federal statutes regarding air quality in the United States. The following federal requirements have been reviewed for applicability:

- PSD/Nonattainment New Source Review (NNSR);
- Federal Class I Area Protection;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP);
- Title V Operating Permits;
- Conformity of General Federal Actions; and
- Greenhouse Gas Reporting.

Due to the Project's minor operational emissions, which fall under applicable regulatory thresholds, these federal requirements would not apply.

Class I areas are areas of special national value (e.g., national parks and wilderness areas) for which enhanced protection of air quality is required. No Class I areas are within 100 km of the Mapleton Compressor Station. The closest Class I area is Chase Lake Wilderness, about 171 miles west of the station.

4.8.2.1 General Conformity

Section 176 of the 1990 CAA Amendments requires the EPA to promulgate rules to ensure federal actions conform to the appropriate state implementation plans. These rules, known collectively as the General Conformity Rule (40 CFR 51.850 to 51.860 and 40 CFR 93.150 to 93.160), require any federal agency responsible for an action in a nonattainment or maintenance area for any criteria pollutant to address General Conformity Rule requirements. The Project would be located in areas designated as attainment or unclassified for all NAAQS, and therefore, the General Conformity Rule does not apply.

4.8.3 Construction Emissions

Construction activities and emission estimates include installation of the pipeline and associated aboveground facilities, including mainline valves, in-line inspection device launchers and receivers, and the Border Stations. Construction is expected to primarily occur over 7 months, beginning in April 2024 and concluding in October 2024. Construction is expected to occur Monday through Saturday from 7 a.m. to 7 p.m. However, certain conditions, as described in section 2.2, may necessitate construction outside of these hours. In addition, 24-hour boring would be required at six guided bore crossings.

Emissions of fugitive dust would result from earthmoving and heavy equipment use. These emissions would be generated from ground excavation, cut-and-fill operations, and use of access roads. These emissions would vary from day to day depending on the level of activity, the specific operations, and the moisture content of exposed surfaces, and would predominantly result from equipment traffic over existing unpaved access roads and generally during windy conditions.

While open burning is not planned, according to WBI Energy, cleared vegetation may be burned. Therefore, emission estimates for open burning were estimated, as summarized in table 4.8-2 (EPA, 1996a) Open burning would impact local air quality and has the potential to impact regional air quality depending on the amounts of particulate matter emitted over the time periods open burning is conducted. NDDEQ Division of Air Quality regulates open burning and WBI Energy would be required to comply with all applicable regulations.

TABLE 4.8-2

Open Burning Emissions for the Project (tons) [a]

		Vegetation Type		
		Open Land / Grassland	**Forested Land**	**Total**
Emissions	CO	54.45	3.77	**58.2**
	$PM_{2.5}$	—	0.41	**0.41**
	PM_{10}	7.26	0.41	**7.67**
	TOC	0.0	—	**0.00**
	Methane	—	0.89	**0.89**
	CO_2e^3	—	22.18	**22.18**

[a] Based on 12.1 acres of open land / grassland and 1.7 acres of forested land having an average fuel loading of 60 tons per acre.

Emissions would also be produced from fuel combustion in construction equipment engines and commuting worker vehicles. Vehicles and equipment would use gasoline or diesel fuel compliant with current federal regulations and would be operated with required emission control devices. Equipment diesel fuel would meet current requirements for using ultra-low-sulfur (15 parts per million) diesel fuel specifications. Construction equipment would typically include bulldozers, graders, backhoes, front-end loaders, welding machines, trucks, pickups, and other miscellaneous equipment. WBI Energy will suggest contractors use newer equipment whenever possible. A summary of estimated emissions from construction activities is shown in table 4.8-3. Emission estimates are based on MOVES 3.0.2, 40 CFR 98, and the EPA's Compilation of Air Pollutant Emission Factors (EPA, 2020; Mandatory Greenhouse Gas Reporting, 2022; EPA, 1985, 1996, and 2006).

WBI Energy would minimize wind erosion and fugitive dust emissions during construction through implementation of its *Fugitive Dust Control Plan*. This plan would prescribe mitigation measures such as regularly watering dusty areas, limiting activity during high winds, and other similar mitigation measures including:

- decreasing vehicle speed to reduce dust entrainment caused by vehicle movement;
- clean up of track-out of soils onto paved roads, typically within 48 hours;
- watering;
- chemical stabilization;
- covering open-bodied trucks carrying sand, soil, or gravel; or
- other equivalent methods or techniques approved by the EI.

Fugitive dust and air pollutants from the internal combustion engines of construction equipment would be limited to the immediate vicinity of the Project area and would be short-term. WBI Energy would advise contractors to minimize unnecessary idling of equipment. As the construction spread moves along the right-of-way, emission sources would move in tandem. These emissions would cease when construction is complete. Emissions from construction are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard because the construction equipment would be operated on an as needed basis mainly during daylight hours.

Through the implementation of the work practices described above and given the short duration of construction activities, the temporary emissions during construction of the Project would be minor, and the impact of these emissions would be localized. Therefore, we conclude that emissions generated during construction would not have significant impacts on local or regional air quality. However, residents near the pipeline right-of-way may experience intermittent elevated levels of fugitive dust (soot) and smoke from any nearby open burning (if conducted).

TABLE 4.8-3

Total Construction-Related Emissions for the Project (tons) [a]

Construction Activity	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOCs	HAPs	CO_2	CH_4	N_2O	CO_2e
2024 EMISSIONS											
Mapleton Compressor Station											
Diesel non-road equipment	0.03	0.06	0.04	0.04	0	0.01	0.03	24.61	0	0	24.64
Diesel and gas on-road equipment	0.06	0.01	0	0	0	0.002	0.001	6.34	0	0	6.36
Construction activity fugitive dust	N/A	N/A	0.37	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	0.03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	**0.09**	**0.08**	**0.37**	**0.06**	**0**	**0.01**	**0.004**	**30.96**	**0**	**0**	**31**
MDU—Kindred Border Station											
Diesel non-road equipment	0.16	0.33	0.03	0.03	0	0.04	0.02	133.73	0	0	133.82
Diesel and gas on-road equipment	0.12	0.03	0.001	0.001	0	0.004	0.001	15.05	0	0	15.08
Construction activity fugitive dust	N/A	N/A	0.49	0.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	0.005	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	**0.28**	**0.35**	**0.53**	**0.11**	**0**	**0.04**	**0.02**	**148.77**	**0**	**0**	**148.89**
MDU—Wahpeton Border Station											
Diesel non-road equipment	0.15	0.3	0.03	0.03	0	0.04	0.02	129.13	0	0	129.21
Diesel and gas on-road equipment	0.12	0.03	0.01	0.01	0	0.004	0.001	15.06	0	0	15.09
Construction activity fugitive dust	N/A	N/A	0.48	0.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	0.003	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 4.8-3

Total Construction-Related Emissions for the Project (tons) [a]

Construction Activity	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOCs	HAPs	CO_2	CH_4	N_2O	CO_2e
Subtotal	**0.27**	**0.33**	**0.51**	**0.1**	**0**	**0.04**	**0.02**	**144.19**	**0**	**0**	**144.3**
Cass County Pipeline Segment											
Diesel non-road equipment	29.59	12.48	1.39	1.33	0.02	10.06	3.41	6,482.20	1.48	0.3	6,607.1
Diesel and gas on-road equipment	11.8	1.02	0.02	0.02	0.004	0.35	0.09	575.65	0.02	0	576.89
Construction activity fugitive dust	N/A	N/A	44.57	6.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	4.33	0.43	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	**41.38**	**13.51**	**50.31**	**8.05**	**0.024**	**10.41**	**3.49**	**7,057.85**	**1.49**	**0.3**	**7,183.9**
Richland County Pipeline Segment											
Diesel non-road equipment	42.1	17.66	1.97	1.89	0.03	14.32	4.84	9,191.89	2.1	0.42	9,369.6
Diesel and gas on-road equipment	16.98	1.46	0.03	0.03	0.01	0.5	0.13	821.77	0.02	0	823.53
Construction activity fugitive dust	N/A	N/A	66.12	9.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	7.45	0.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	**59.08**	**19.12**	**75.58**	**11.97**	**0.03**	**14.81**	**4.97**	**10,014**	**2.12**	**0.42**	**10,193**
Total Construction Emissions	**101.1**	**33.39**	**127.31**	**20.28**	**0.06**	**25.3**	**8.51**	**17,395**	**3.62**	**0.72**	**17,701**

N/A = not applicable

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

Type, quantity, load factor, and duration of use of construction equipment provided by WBI Energy. The standard work schedule will be 12 hour days, 6 days a week.

CO_{2e} is the sum of CO_2, CH_4, and N_2O multiplied by the applicable global warming potential expressed in tons.

See also Appendix 9C (accession number 20220527-5343).

4.8.4 Operational Emissions

Natural gas within the pig launcher and receiver would be released when a pig device is inserted or removed from the pipeline. These emissions would be minor as routine pigging is not anticipated. Fugitive emissions may also occur from the aboveground facilities. WBI Energy states it would monitor and repair leaks per Pipeline and Hazardous Materials Safety Administration (PHMSA) requirements. While WBI Energy is not currently part of the Methane Challenge program, it is a part of the program under the ONE Future Commitment Operation. No compression or other aboveground equipment such as dehydrators, generators, line heaters, or other combustion equipment are part of the Project and, therefore, there would be no GHG emissions from these other sources. Estimated operational emissions are shown in table 4.8-4.

TABLE 4.8-4

Estimated Operational Emissions

Emission Unit	NO_X (tpy)	CO (tpy)	VOCs (tpy)	$PM_{10}/PM_{2.5}$ (tpy)	SO_2 (tpy)	CO_2e (tpy)	Largest Single HAP [a] (tpy)	Total HAPs (tpy)
Aboveground Facilities (fugitive leaks)	N/A	N/A	0.28	N/A	N/A	1,657	N/A	0.001
Pipeline	N/A	N/A	N/A	N/A	N/A	69.55	N/A	N/A
Pig Launching & Receiving	N/A	N/A	Neg.	N/A	N/A	Neg.	N/A	Neg.
TOTAL Proposed PTE [e]	NA	NA	0.28	NA	NA	1,727	NA	**0.001**

N/A = not applicable; Neg. = Negligible; PTE = potential to emit

[a] Note: Short tons (2,000 pounds), not long or metric tons, are used in PSD applicability calculations. Metric tons are used in the GHG reporting rule.

On the basis that the Project would emit no criteria pollutants and very limited quantities of VOCs and HAPs, we conclude that the Project's direct operational emissions would negligibly impact local and regional air quality.

4.8.5 Climate Change

Climate change is the variation in the Earth's climate (including temperature, precipitation, humidity, wind, and other meteorological variables) over time. Climate change is driven by accumulation of GHGs in the atmosphere due to the increased consumption of fossil fuels (e.g., coal, petroleum, and natural gas) since the early beginnings of the industrial age and accelerating in the mid-to-late-20th century.[33] The GHGs produced by fossil fuel combustion are carbon dioxide, methane, and nitrous oxide.

[33] Intergovernmental Panel On Climate Change, United Nations, *Summary for Policymakers* of Climate Change 2021: The Physical Science Basis (Valerie Masson-Delmotte et al. eds.) (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (IPCC Report) at SPM-5. Other forces contribute to climate change, such as agriculture, forest clearing, and other anthropogenically driven sources.

In 2017 and 2018, the U.S. Global Change Research Program (USGCRP)[34] issued its Climate Science Special Report: Fourth National Climate Assessment, Volumes I and II.[35] This report and the recently released report by the Intergovernmental Panel on Climate Change (IPCC), Climate Change 2021: The Physical Science Basis, state that climate change has resulted in a wide range of impacts across every region of the country and the globe. Those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, human health, and ocean systems.[36] According to the Fourth Assessment Report, the United States and the world are warming; global sea level is rising and oceans are acidifying, and certain weather events are becoming more frequent and more severe.[37] These impacts have accelerated throughout the end of the 20th and into the 21st century.[38]

GHG emissions do not result in proportional local and immediate impacts; it is the combined concentration in the atmosphere that affects the global climate system. These are fundamentally global impacts that feedback to local and regional climate change impacts. Thus, the geographic scope for analysis of GHG emissions is global, rather than local or regional. For example, a project 1 mile away emitting 1 ton of GHGs would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting 1 ton of GHGs.

Climate change is a global concern; however, for this analysis, we will focus on the existing and potential climate change impacts in the general Project area. The USGCRP's Fourth Assessment Report notes the following observations of environmental impacts are attributed to climate change in the Northern Great Plains region:[39]

- since the beginning of the 20th century, temperatures in North Dakota have risen approximately 2.6 °F;
- North Dakota increasing rainfall, with an increase in the frequency of 2-inch rainfall events;
- heavy rainfall events are leading to more flooding, erosion, and runoff into waterways;
- climate-driven changes in snowpack, spring snowmelt, and runoff have resulted in more rapid melting of winter snowpack and earlier peak runoff due to rapid springtime warming;
- lower stream flows, especially in late summer, which combined with warmer air temperatures, have caused stream temperatures to rise; and
- in North Dakota the intensity of droughts is projected to increase due to increased evaporation rates from rising temperatures which may increase the rate of soil moisture loss and the intensity of droughts.

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34 The U.S. Global Change Research Program is the leading U.S. scientific body on climate change. It comprises representatives from 13 federal departments and agencies and issues reports every 4 years that describe the state of the science relating to climate change and the effects of climate change on different regions of the United States and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health.

35 U.S. Global Change Research Program, Climate Science Special Report, Fourth National Climate Assessment | VOLUME I (Donald J. Wuebbles et al. eds) (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. Global Change Research Program, Fourth National Climate Assessment, Volume II Impacts, Risks, And Adaptation In The United States (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II).

36 IPCC Report at SPM-5 to SPM-10.

37 USGCRP Report Volume II at 73-75.

38 *See, e.g.*, USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).

39 USGCRP Report Volume I and II.

The USGCRP's Fourth Assessment Report[40] notes the following projections of climate change impacts in the Project region (Northern Great Plains) with a high or very high level of confidence:[41]

- annual average temperatures in the Northern Great Plains are projected to increase by 3.6 to 4.6 °F by the mid-21st century and by 5.4 to 9.4 °F by the late 21st century, compared to the average for 1976-2005;
- summer precipitation is expected to vary across the Northern Great Plains, ranging from no change under a lower scenario to between 10 and 20 percent reductions under a higher scenario; however, this is projected to occur with a higher frequency of heavy rain;
- the warmer and generally wetter conditions projected for some of the Northern Great Plains, coupled with elevated atmospheric CO_2 concentrations, are expected to challenge existing agricultural practices with changing soil moisture content, growing season length, increase crop pests, increase weed and invasive competition as well as other identified challenges;
- the probability for more very hot days (days with maximum temperatures above 90 °F) is expected to increase, and cool days (days with minimum temperatures less than 28 °F) are expected to decrease by 30 days or more per year by mid-century; and
- in the mountains of western Wyoming and western Montana, the fraction of total water in precipitation that falls as snow (from October 1 to March 31) is expected to decline by between 25 and 40 percent by 2100.

It should be noted that while the impacts described above taken individually may be manageable for certain communities, the impacts of compound events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of saturated soils) can be greater than the sum of the parts.[42]

GHG emissions associated with construction and operation of the Project were identified and quantified in sections 4.8.3 and 4.8.4 of this EIS. Emissions of GHGs are typically expressed in terms of CO_2e.[43] Construction of the Project may result in emissions of about 17,701 tons (16,058 metric tons) of CO_2e over the duration of construction (see table 4.8-2). Operation of the Project would result in an estimated emission of 1,727 tons (1,567 metric tons) of CO_2e per year.

For information purposes, we estimate the downstream GHG emissions from the Project assuming 100 percent utilization of the subscribed capacity of 20,600 equivalent dekatherms per day. Combustion of 20,600 equivalent dekatherms per day would result in 397,830 metric tons per year (tpy) of CO_2e emissions. We note that this represents an upper bound estimate of end-use combustion that could result from the subscribed natural gas transported by the Project. This estimate assumes that the maximum subscribed capacity is transported 365 days per year.

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40 USGCRP Report Volume II.

41 The report authors assessed current scientific understanding of climate change based on available scientific literature. Each "Key Finding" listed in the report is accompanied by a confidence statement indicating the consistency of evidence or the consistency of model projections. A high level of confidence results from "moderate evidence (several sources, some consistency, methods vary and/or documentation limited, etc.), medium consensus." A *very* high level of confidence results from "strong evidence (established theory, multiple sources, consistent results, well documented and accepted methods, etc.), high consensus." https://science2017.globalchange.gov/chapter/front-matter-guide/.

42 USGCRP Report Volume II.

43 GHG gases are converted to CO_2e by means of the GWP; the measure of a particular GHG's ability to absorb solar radiation; and its residence time within the atmosphere, consistent with the EPA's established method for reporting GHG emissions for air permitting requirements that allows a consistent comparison with federal regulatory requirements.

Construction and operation of the Project would increase the atmospheric concentration of GHGs, in combination with past, current, and future emissions from all other sources globally and would contribute incrementally to future climate change impacts. In order to assess impacts on climate change associated with the Project, Commission staff considered whether it could identify discrete physical impacts resulting from the Project's GHG emissions or compare the Project's GHG emissions to established targets established to combat climate change.

To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project's contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project's significance when compared to established GHG reduction targets at the state or federal level. Ultimately, this EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.[44] However, as we have done in prior NEPA analyses, we disclose the Project's GHG emissions in comparison to national and state GHG emission inventories.

In order to provide context of the Project emissions on a national level, we compared the Project's GHG emissions to the total GHG emissions of the United States as a whole. At a national level, 5,222.4 million metric tons of CO_2e were emitted in 2020 (inclusive of CO_2e sources and sinks) (EPA, 2021d). Construction emissions from the Project could potentially increase CO_2e emissions based on the national 2020 levels by 0.0003 percent; in subsequent years, the Project operations including downstream emissions could potentially increase emissions nationally by 0.0076 percent.

In order to provide context of the Project emissions on a state level, we compare the Project's GHG emissions to the North Dakota GHG inventories for their respective construction and operational volumes. At the state level, North Dakota energy related CO_2 emissions in 2019 were 57.2 million metric tons (EIA, 2022). Project construction could potentially increase CO_2e emissions based on North Dakota 2019 levels by 0.03 percent; in subsequent years, Project operation and downstream emissions could potentially increase emissions by 0.70 percent. We typically compare the Project against state emissions goals, however, the State of North Dakota does not have a statewide GHG emissions goal (Center for Climate and Energy Solutions [C2es], 2022).

4.8.5.1 EPA

The EPA's comments on the FERC Notice of Intent stated that the draft EIS should estimate and analyze all potential upstream and downstream GHG emissions associated with the proposed Project. Above, we discuss the Projects' potential downstream emissions. Related to comments on upstream emissions impacts, the specific sources of natural gas to be transported by the Project are unknown and would likely change throughout the Project's operation. As the Commission has previously concluded in numerous natural gas infrastructure proceedings, the environmental effects resulting from natural gas production are likely neither caused by a proposed project nor are they reasonably foreseeable consequences of its approval of a project, as contemplated by CEQ regulations.[45] To date, the Commission has not found

[44] Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, 178 FERC ¶ 61,108 (2022); 178 FERC ¶ 61,197 (2022).

[45] Birckhead v. FERC, 925 F.3d 510, 516-17 (D.C. Cir. 2019) (Birckhead). See, e.g., Double E Pipeline, LLC, 173 FERC 61,074 at P 97 (2020), Central New York Oil and Gas Co., LLC, 137 FERC ¶ 61,121, at PP 81-101 (2011), order on reh'g, 138 FERC ¶ 61,104, at PP 33-49 (2012), petition for review dismissed sub nom. Coal. for Responsible Growth v. FERC, 485 F. App'x. 472,474-75 (2d Cir. 2012) (unpublished opinion); see also Adelphia Gateway, LLC, 169 FERC ¶ 61,220 at P 243, order on reh'g, 171 FERC ¶ 61,049 at P 89.

upstream emissions to be an effect of any proposed project, primarily because of the following unknown factors: the location of the supply source; whether transported gas would come from new or existing production; and whether there would be any potential associated development activities, and if so, its location.[46] However, the Commission will continue to determine, on a case-by-case basis, whether GHG emissions from upstream production activities are a reasonably foreseeable and causally connected result of a proposed project.

The EPA recommends omitting comparisons to state GHG reduction goals, replacing it with a qualitative discussion disclosing the increasing conflict over time between continued GHG emissions and GHG emission reduction policy, and recommends FERC consider ongoing and projected regional and local climate change and ensure robust climate resilience/adaption planning in the Project design. The EPA also recommends that FERC thoroughly discuss the role of the Project in the context of national, state, and regional policies to achieve science-based GHG reduction goals, and evaluate and disclose whether a project that increases fossil fuel consumption can be consistent with the energy use changes necessary to achieve those goals.

We note that on January 20, 2021, President Biden issued the Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (EO 13990); and on January 27, 2021, he issued the Executive Order on Tackling the Climate Crisis at Home and Abroad (EO 14008). Amongst other objectives, the Executive Orders call for a net-zero emission economy and a carbon-free electricity sector. In addition, on January 20, 2021, President Biden announced that the United States will rejoin the Paris Climate Agreement, enabling the United States to be a party to the Agreement on February 19, 2021. The Agreement aims to limit global warming to well below 2 °C, and preferably to 1.5 °C, compared to preindustrial levels.[47] On April 20, 2021, the United States set a U.S. economy-wide target of reducing net GHG emissions by 50 to 52 percent below 2005 levels by 2030.[48] The Commission has stated in recent orders that it is unable to determine how individual projects will affect international, national, or statewide GHG emissions reduction targets or whether a Project's GHG emissions comply with those goals or laws.[49] Additionally, as the Commission has stated in recent orders that the comparisons provide additional context in considering a project's potential impact on climate change. Accordingly, we have included those comparisons in our NEPA analysis.

The EPA recommended that FERC use estimates of the social costs of greenhouse gases (SC-GHG) to disclose and consider the climate damages from net changes in direct and indirect GHG emissions resulting from the proposed Project. We include a disclosure of the social cost of GHGs (also referred to as the "social cost of carbon" [SCC]) to assess climate impacts generated by each additional metric ton of GHGs emitted or saved by the Project. We note there is pending litigation challenging federal agencies' use of the Interagency Working Group (IWG) on SC-GHG interim values for calculating the social cost of GHGs.[50] In addition, the CEQ noted that it is working with representatives on the GHG IWG to develop

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46 *See also* Birckhead, 925 F.3d at 517 (finding the Commission appropriately did not consider upstream emissions a project effect because the record did not contain any information establishing a causal relationship between the proposed project and upstream development).

47 United Nations Framework Convention on Climate Change. 2021. The Paris Agreement: What is the Paris Agreement? Available online at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement#:~:text=The%20Paris%20Agreement%20is%20a,compared%20to%20pre%2Dindustrial%20levels.. Accessed October 2022.

48 The United States of America Nationally Determined Contribution. 2021. Available online at: https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf. Accessed May 2021.

49 *See* Order Issuing Certificates and Approving Abandonment, 178 FERC ¶ 61,199 (2022) at P89; and Order Issuing Certificate, 178 FERC ¶ 61,198 (2022) at P48.

50 Missouri v. Biden, 8th Cir. No. 21-3013; Louisiana v. Biden, No. 21-cv-1074-JDC-KK (W.D. La). On February 11, 2022, the U.S. District Court for the Western District of Louisiana issued a preliminary injunction limiting federal agencies'

additional guidance regarding the application of the SCC tool in federal decision-making processes, including in NEPA analyses.[51] The Commission has not determined which, if any, modifications are needed to render the SCC tool useful for project-level analyses.[52]

As both EPA and CEQ participate in the IWG, Commission staff used the methods and values contained in the IWG's current draft guidance but note that different values will result from the use of other methods.[53] The downstream emissions estimate used to calculate the SC-GHG is based on combustion of the subscribed Project capacity of 20,600 Dth/d starting in 2024. However, the actual emissions associated with downstream use of natural gas transported by the Project would depend upon utilization of the pipeline facilities. Once construction is complete, the Project's emissions would be at a constant rate throughout the life of the Project. Construction emissions would take place between 2023 and 2024.

Accordingly, Commission staff calculated the SC-GHG for CO_2, nitrous oxide, and methane. For the analysis, staff assumed discount rates of 5 percent, 3 percent, and 2.5 percent,[54] assumed the Project will begin service in 2024, and that the Project's emissions will be at a constant rate throughout a 10-year period, based on the term of the precedent agreements for the Project. Noting these assumptions, the emissions from operation of this Project are calculated to result in a total social cost of GHGs equal to $54,721,891, $199,312,058, and $299,056,735, respectively (all in 2020 dollars).[55] Using the 95th percentile of the social cost of GHGs using the 3 percent discount rate,[56] the total social cost of GHGs from the Project is calculated to be $600,654,703 (in 2020 dollars).

4.9 NOISE

The Project would result in temporary increases of noise through short-term construction activities. The ambient sound level of a region is defined by the total noise generated within the specific environmental and is comprised of natural and manmade sounds. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day, as well as seasonally. This variation is caused in part by changing weather conditions and the effect of seasonal vegetation cover. The Project would also result in permanent (ongoing) noise impacts associated with operation of the aboveground facilities.

employment of estimates of the social costs of GHGs and use of the IWG's interim estimates. On March 16, 2022, the U.S. Court of Appeals for the Fifth Circuit issued a stay of the district court's preliminary injunction, finding among other things that the federal agency defendants' continued use of the interim estimates was lawful. Louisiana v. Biden, No. 22-30087 (5th Cir. Mar. 16, 2022).

51 CEQ's May 27, 2021 Comments filed in Docket No. PL18-1-000, at 2.

52 See Order Issuing Certificates and Approving Abandonment, 178 FERC ¶ 61,199 (2022) at fn 141.

53 *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021 (IWG Interim Estimates Technical Support Document).

54 IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5 percent discount rate to address the concern that interest rates are highly uncertain over time; the 3 percent value to be consistent with OMB circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5 percent discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. Id. at 18-19, 23-24.

55 The IWG draft guidance identifies costs in 2020 dollars. Id. at 5 (Table ES-1).

56 This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO_2] distribution." Id. at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

4.9.1 Regulations

Two measurements are used to relate the time-varying quality of environmental noise to its known effects on people, including the equivalent sound level (L_{eq}) and the L_{dn}. The L_{eq} is a sound level over a specific time period corresponding to the same sound energy as measured for an instantaneous sound level assuming it is a constant noise source. The L_{dn} considers the time of day and duration the noise is encountered since sound levels are perceived differently, depending on the length of exposure and time of day.

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. FERC has adopted this criterion and used it to evaluate the potential noise impacts from the Project at pre-existing NSAs such as schools, hospitals, and residences. At locations where existing ambient noise exceeds the 55-dBA threshold, Commission guidelines require project-related noise increase to be below 10 dBA at any NSA. In addition, Commission regulations state that operation of project facilities may not result in any perceptible increase in vibration at any NSA.

Specifically, in calculation of the L_{dn}, late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are increased by 10 dBA to account for people's greater sensitivity to sound during nighttime hours. Due to the 10 dBA nighttime penalty added prior to calculation of the L_{dn}, for a facility to meet the 55 dBA L_{dn} limit established by the EPA to protect the public from indoor and outdoor activity interference, a facility must be designed such that the constant 24-hour noise level does not exceed a L_{eq} of 48.6 dBA at any NSA. The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for a noticeable change in loudness is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half as loud.

4.9.1.1 State and Local Noise Regulations

North Dakota regulates noise using public nuisance laws, but does not impose property-line noise limits for new facilities. Cass and Richland Counties do not have noise regulations. The City of Wahpeton's noise ordinance (Section 26-188 Loud, Disturbing and Unnecessary Noises Prohibited; Declared a Nuisance) does not contain a noise limit but prohibits making, creating, or maintaining loud, unnatural or unusual and disturbing noises (Wahpeton, 2022).

The City of Wahpeton's noise regulations are less strict than FERC's requirements for operational noise and FERC's guidance for nighttime construction noise; therefore, meeting FERC's 55 dBA L_{dn} criteria would be sufficient to meet the City of Wahpeton's noise regulations.

4.9.2 Construction Noise Impacts and Mitigation

Noise would be generated during construction of the pipeline and aboveground facilities for the Project. Noise levels would be highest in the immediate vicinity of construction activities and would diminish with distance from the work areas. These impacts would be localized and temporary. The changing number and type of construction equipment at construction sites would result in varying levels of noise. Construction activities associated with the Project would be performed with standard heavy equipment such as track-excavators, backhoes, cranes, bulldozers, dump trucks, and boring equipment. Noise would also be generated by trucks and other light vehicles traveling in and near areas under construction. Construction would generally not affect nighttime noise levels as most activity would be

limited to 7 a.m. to 7 p.m., Monday through Saturday, except for guided bore activities, and specific, limited construction activities such as tie-ins and hydrostatic testing (see section 2.2).

Surface topography, vegetation cover, wind, and weather conditions also affect the distance that construction-related noise extends from a work area. Tall, dense vegetation and rolling topography typically attenuates noise when compared to less vegetated, open land. For the Project, the most prevalent sound source during construction would typically be the internal combustion engines used to power the construction equipment.

Construction of the aboveground facilities would consist of earth work (e.g., site grading, clearing, grubbing, trenching operations) and construction of the site foundations and equipment. Construction of the pipeline would be performed with standard heavy-duty construction equipment, such as trucks, backhoes, excavators, loaders, and cranes. Noise from pipeline construction would be limited to short durations over a period of 3 to 4 weeks at any one location. Blasting is not anticipated on this Project.

4.9.2.1 Guided Bore Crossings

WBI Energy proposes to use 73 guided bores to cross roads, wetlands, waterbodies, and other sensitive features. A description of the guided bore method can be found in section 2.3. Six of the guided bores would require 24-hour construction. NSAs are located within 0.5 mile of four of the six 24-hour guided bore crossings (Maple River, I-94, Sheyenne River, and Antelope/Wild Rice River). Therefore, WBI Energy completed an acoustical assessment of cumulative noise impacts at these four locations (table 4.9-1).

TABLE 4.9-1

Noise Analysis for 24-Hour Guided Bore Crossings

Guided Bore Name	Distance (feet) and Direction of NSA	Estimated Ambient Noise Level [a] (L_{dn}) dBA	Estimated L_{dn} of the Guided Bore Equipment (dBA)	Existing Ambient + L_{dn} of Guided Bore Equipment (dBA)	Estimated Noise Increase (dB)
Maple River Entry	1,970 / NE	42	42.1	45.1	3.1
Maple River Exit	1,740 / N	42	43.6	45.9	3.9
Cumulative Maple River	**N/A**	**42**	**45.9 [c]**	**47.4**	**5.4**
I-94 Entry	2,000 / SE	52	41.9	52.4	0.4
I-94 Exit	1,820 / E	52	43.1	52.5	0.5
Cumulative I- 94	**N/A**	**52**	**45.6 [c]**	**52.9**	**0.9**
Sheyenne River Entry	610 / SE	42	55.3	55.5	13.5
Sheyenne River Exit	870 / NE	42	51.6	52.0	10.0
Cumulative Sheyenne River	**N/A**	**42**	**56.8 [c]**	**56.9**	**14.9**
Antelope/Wild Rice River Entry	2,190 / NE	42	40.8	44.4	2.4
Antelope/Wild Rice River Exit	1,460 / NW	42	45.7	47.3	5.3

TABLE 4.9-1

Noise Analysis for 24-Hour Guided Bore Crossings

Cumulative Antelope/Wild Rice River	**N/A**	**42**	**46.9 [c]**	**48.4**	**6.4**

N = north; NW = northwest; NE = northeast; SE = southeast

[a] Based on American National Standards Institute Standard S12.9-2013/Part 3, Annex C.

[c] Nearest NSA to guided bore entry and exit location is the same NSA.

As shown in table 4.9-1, guided bore noise levels could exceed 55 dBA L_{dn} at the Sheyenne River crossing. WBI Energy estimates that the guided bore of the Sheyenne River should be completed in four to six days. WBI Energy would notify all affected landowners within 0.5 mile of the Sheyenne River guided bore prior to commencing boring activities. To mitigate noise impacts, WBI Energy proposed financial compensation for temporary relocation of residents. However, based on projected sound levels, we believe direct noise mitigation would reduce disruption to local residents; therefore, **we recommend that:**

- **Prior to construction of the Sheyenne River guided bore crossing, WBI Energy should file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at NSAs nearest to the Sheyenne River guided bore entry and exit points. During drilling operations, WBI Energy should implement the approved plan, monitor noise levels, document the noise levels in the construction status reports, and restrict the noise attributable to the drilling operations to no more than a day-night sound level (L_{dn}) of 55 decibels on the A-weighted scale (dBA) at the NSAs.**

4.9.2.2 Border Station and Pipeline Construction

In general, construction activities would take place during daylight hours from 7 a.m. to 7 p.m., Monday through Saturday. However, certain activities may require extended construction hours, including preparation for performance of strength and leak testing of pipeline segments; critical tie-ins; trench dewatering, and certain aboveground facility commissioning activities. Both border stations would be within agricultural areas. The closest NSA to the MDU-Wahpeton Border Station would be a residence 1,660 feet to the south. The closest NSA, a residence, to the MDU-Kindred Border Station would be 2,800 feet to the southeast (greater than 0.5 mile away from any NSAs).

Construction noise for the Project would be short-term and temporary. Based on WBI Energy's proposed mitigation measures, we conclude that construction noise resulting from the Project would not be significant.

4.9.3 Operational Noise Impacts and Mitigation

The Project would include modifications to the existing Mapleton Compressor Station to include metering and regulating equipment. Noise modeling of the existing Mapleton Compressor Station and new metering and regulating equipment estimated noise levels would be less than 55 dBA L_{dn} at the three nearby NSAs.

Neither border station would include installation of noise generating equipment and therefore the operation of each border station would not result in any noise impacts at any NSA.

Based on the proposed mitigation measures and our recommendations, we conclude that the noise attributable to the operation of the Project would not cause a significant impact.

4.10 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. Methane is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of 1,000 °F and is flammable at concentrations between 5.0 percent and 15.0 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. Methane is buoyant at atmospheric temperatures and disperses rapidly in air.

4.10.1 DOT Safety Standards

The DOT's PHMSA is mandated to provide pipeline safety under 49 USC Chapter 601. PHMSA administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. PHMSA develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level.

Title 49 USC Chapter 601 provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. A state may also act as the DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement actions. The State of North Dakota has delegated authority to assume safety responsibility for intrastate, but not interstate, pipeline facilities.

PHMSA pipeline standards are published in 49 CFR Parts 190-199. Part 192 specifically addresses natural gas pipeline safety issues. Under a Memorandum of Understanding on Natural Gas Transportation Facilities dated January 15, 1993, between the DOT and FERC, PHMSA has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by PHMSA in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. FERC accepts this certification and does not impose additional safety standards.

If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert PHMSA. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction. FERC also participates as member of PHMSA's Technical Pipeline Safety Standards Committee, which determines whether proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the PHMSA Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. PHMSA specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

PHMSA also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined below:

Class 1 Location with 10 or fewer buildings intended for human occupancy.

Class 2 Location with more than 10 but less than 46 buildings intended for human occupancy.

Class 3 Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period.

Class 4 Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance between sectionalizing block valves (e.g., 10.0 miles in Class 1; 7.5 miles in Class 2; 4.0 miles in Class 3; and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure (MAOP), inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

The entire Project would be constructed through Class 1 areas. WBI Energy would design, test, and operate sections of its pipeline by their designated pipeline class locations, in accordance with 49 CFR 192, Subpart G. Through the life of the pipeline and aboveground facilities, changes in population density near the Project facilities would be monitored to document that the new facilities would continue to meet the appropriate design criteria and safety standards where class locations change in accordance with 49 CFR 192, Subpart L, Sections 192.609 and 192.611. When changes in population density occur, WBI Energy would modify the pipeline to comply with PHMSA requirements by replacing sections of pipe or, reducing the operating pressure in the line. WBI Energy would review the Project annually for population and Class location changes.

PHMSA's pipeline safety regulations require operators to develop and follow a written integrity management program that (1) contains all the elements described in 49 CFR 192.911 and (2) address the risks on each transmission pipeline segment. The integrity management program applies to all high consequence areas (HCA).

The DOT has published rules that define HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for the DOT to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area. The HCAs may be defined in one of two ways. In the first method, an HCA includes:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius[57] is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle;[58] or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.

An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

In the second method, an HCA includes any area within a potential impact circle containing:

- 20 or more buildings intended for human occupancy; or
- an identified site.

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The DOT regulations specify the requirements for the integrity management plan at 49 CFR 192.911. WBI Energy has determined the Project, as designed, would not affect any HCAs, alleviating the need for further consideration relative to 49 CFR 192.761(f). The pipeline integrity management rule for HCAs requires inspection of the pipeline HCAs every 7 years.

PHMSA's minimum standards for operating and maintaining pipeline facilities include the requirement to establish a written plan governing these activities. Each pipeline operator is required to establish an emergency plan that includes procedures to minimize the hazards of a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- implementing an emergency system shutdown and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property and making them safe from actual or potential hazards.

PHMSA requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization and to coordinate mutual assistance in the event of a natural gas pipeline emergency. As part of PHMSA's requirements, WBI Energy must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to the appropriate public officials. WBI Energy would provide the appropriate training to local emergency service personnel before the Project is placed in-service.

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57 The potential impact radius is calculated as the product of 0.69 and the square root of: the maximum allowable operating pressure of the pipeline (in pounds per square inch gauge) multiplied by the square of the pipeline diameter in inches.

58 The potential impact circle is a circle of radius equal to the potential impact radius.

On October 1, 2019, PHMSA issued new regulations modifying and expanding the standard pipeline safety standards under 49 CFR Parts 191 and 192. These regulations, in part, established new standards for in-line inspections; requirements for newly established moderate consequence areas (MCA); requirements to consider seismicity and geotechnical risks in its integrity management plan for the pipeline; new regulations on pipeline patrol frequency for HCAs, MCAs, and grandfathered pipelines; a policy to reconfirm MAOP for certain pipelines; installation of pressure relief for pig launcher/receivers; and reporting requirements for exceedances of MAOP to PHMSA. These regulations went into effect on July 1, 2020. WBI Energy has identified two MCAs. The first MCA would be where the new Wahpeton Expansion Project pipeline would cross I-94 (about 900 feet in length). The second MCA would be where the pipeline would cross I-29 and parallel the on-ramp. WBI Energy would use a thicker pipe wall and an MAOP of less than 30 percent in these MCA areas in accordance with 49 CFR 192.710[59]. In addition, WBI Energy would install launching and receiving facilities to allow inspection and confirmation of integrity of the pipeline through these areas.

4.10.2 Pipeline Accident Data

- PHMSA requires all operators of natural gas transmission pipelines to notify it of any significant incident and to submit a report within 20 days. Significant incidents are defined as any leaks that:
- cause a death or personal injury requiring hospitalization; or
- involve property damage of more than $50,000 (1984 dollars).

During the 20-year period from 2002 through 2021, a total of 1,149 significant incidents were reported on the more than 300,000 total miles of natural gas transmission pipelines nationwide (PHMSA, 2021). Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 4.10-1 provides a distribution of the causal factors as well as the number of each incident by cause.

The dominant causes of pipeline incidents were corrosion and pipeline material, weld, or equipment failure, constituting 55.4 percent of all significant incidents. The pipelines included in the data set in table 4.10-1 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

TABLE 4.10-1

Natural Gas Transmission Pipeline Significant Incidents by Cause (2002-2021)

Cause	Number of Incidents[a]	Percentage of All Incidents
Corrosion	192	16.71
Excavation [b]	176	15.32
Pipeline material, weld, or equipment failure	444	38.64
Natural force damage	100	8.70
Outside force[c]	82	7.14
Incorrect operation	70	6.09
All other causes[d]	85	7.40
Total	**1,149**	**100**

[59] Mainline pipe would have a 0.250-inch wall, guided bore pipe would have a 0.312-inch wall, station piping would have a 0.375-inch wall, and MCAs would have a 0.500-inch wall.

TABLE 4.10-1

Natural Gas Transmission Pipeline Significant Incidents by Cause (2002-2021)

Cause	Number of Incidents[a]	Percentage of All Incidents

[a] All data acquired from PHMSA Significant Incident files, July 2021.
[b] Includes damage from third-party excavation, operator/contractor excavation damage, and previous damage due to excavation.
[c] Fire, explosion, vehicle damage, previous damage, intentional damage.
[d] Miscellaneous causes or other unknown causes.

The frequency of significant incidents is strongly dependent on pipeline age. Older pipelines have a higher frequency of corrosion incidents and material failure, since corrosion and pipeline stress and strain are time-dependent processes. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially protected pipe.

Excavation, natural forces, miscellaneous other causes, and outside forces are the next four most significant causes of pipeline incidents, totaling 38.6 percent of significant pipeline incidents. These result from encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and miscellaneous or other unknown causes. Older pipelines have a higher frequency of outside force incidents, in part because their location may be less well known and less well marked as compared to newer lines. In addition, older pipelines contain a disproportionate number of smaller-diameter pipelines; which have a greater rate of outside forces incidents. Small-diameter pipelines are more easily crushed or broken by mechanical equipment or earth movement. Table 4.10-2 provides a breakdown of excavation, outside force, and natural force incidents by cause.

TABLE 4.10-2

Excavation, Outside Forces, and Natural Forces Incidents by Cause (2002-2021)

Cause	Number of Incidents[a]	Percentage of All Incidents[b]
Third-party excavation damage	137	11.9
Operator/contractor excavation damage	25	2.2
Previous damage to excavation	14	1.2
Heavy rain/floods	29	2.5
Earth movement	26	2.3
Lightning/temperature	26	2.3
High winds	7	0.6
Natural force (other)	12	1.0
Vehicle (not engaged with excavation)	44	3.8
Fire/explosion	13	1.1
Previous mechanical damage	5	0.4
Fishing or maritime activity	3	0.3
Intentional damage	1	0.1
Electrical arcing from other equipment/facility	4	0.3
Unspecified/other outside force	97	8.4

TABLE 4.10-2

Excavation, Outside Forces, and Natural Forces Incidents by Cause (2002-2021)

Cause	Number of Incidents[a]	Percentage of All Incidents[b]
Total	**443**	**38.6**

[a] All data acquired from PHMSA Significant Incident files, July 2021.
[b] Numbers may not sum exactly due to rounding.

Since 1982, operators have been required to participate in One-Call public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The One-Call program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. WBI Energy would use the North Dakota One Call system for utility line locations prior to excavation.

4.10.3 Impact on Public Safety

WBI Energy would follow all applicable PHMSA pipeline safety standards as well as regular monitoring and testing of the pipeline. While pipeline failures are rare, the potential for pipeline systems to rupture and the risk to nearby residents is discussed below.

The incident data summarized in table 4.10-3 include pipeline failures of all magnitudes with widely varying consequences. Table 4.10-3 presents the 32 injuries and fatalities that occurred on natural gas transmission lines between 2017 and 2021. Most fatalities from natural gas pipelines are due to local distribution pipelines, which are not regulated by FERC. These are pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, distribution lines are smaller-diameter pipes and/or plastic pipes, which are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to FERC regulated natural gas transmission pipelines.

TABLE 4.10-3

Injuries and Fatalities – Natural Gas Transmission Pipelines (2017-2021)[a]

Year	Injuries	Fatalities
2017	3	3
2018	5	1
2019	8	1
2020	1	2
2021	4	4

[a] All data acquired from PHMSA Significant Incident files, July 2021.

To provide a relative measure of the industry-wide safety of natural gas transmission pipelines, the nationwide totals of accidental fatalities from various anthropogenic and natural hazards are listed in table 4.10-4. However, direct comparisons between accident categories should be made cautiously because individual exposures to hazards are not uniform among all categories. The data nonetheless indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to the other categories.

Furthermore, the fatality rate is much lower than the fatalities from natural hazards such as lightning, tornadoes, or floods.

The available data show that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. From 2002 to 2021, there were an average of 57 significant incidents and 2 fatalities per year. The number of significant incidents distributed over the more than 300,000 miles of natural gas transmission pipelines indicates the risk is low for an incident at any given location. The operation of the Wahpeton Expansion Project would represent only a slight increase in risk to the nearby public.

TABLE 4.10-4

Nationwide Accidental Fatalities by Cause

Type of Accident [a]	Annual Number of Deaths
All unintentional deaths	173,040
Poisoning	65,773
Motor vehicle	39,107
Falls	39,443
Pedestrian-vehicle crash [b]	6,516
Drowning	3,692
Fire, smoke inhalation, burns	2,692
Floods [c]	88
Tornado [c]	71
Hurricane [c]	45
Lightning [c]	37
Natural gas distribution lines [d]	9
Natural gas transmission pipelines [d]	2

[a] All data, unless otherwise noted, reflects 2019 statistics from: Xu et al., 2021. https://www.cdc.gov/nchs/data/nvsr/nvsr70/nvsr70-08-508.pdf.

[b] National Highway Traffic Safety Administration 2020 data, Accessed July 2022. https://cdan.nhtsa.gov/tsftables/National%20Statistics.pdf.

[c] Accident data presented for floods, tornadoes, lightning, and hurricanes represent the 30 year average of accidental deaths between 1992 and 2021 (National Oceanic and Atmospheric Administration, 2021).

[d] Accident data presented for natural gas distribution lines and transmission pipelines represent the 20-year average between 2002 and 2021 (DOT, 2021). PHMSA, Pipeline Incident 20 Year Trends; Available at: https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends. Accessed 7/13/2022.

During scoping, the NDGFD recommended that pressure sensing valves be placed on both sides of waterways and a maintenance schedule developed to ensure the integrity of the pipe for the life of the Project. According to WBI Energy, the Project would exceed the minimum requirements, with block valves placed every 10 miles along the pipeline route (rather than the required 20 miles). In addition, WBI Energy would install pipe with a greater wall thickness and protective coasting at waterbody crossings. As discussed in section 4.10.1, Section 157.14(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. WBI Energy would meet this requirement when constructing and operating the Project.

4.11 CUMULATIVE IMPACTS

In accordance with NEPA and FERC policy, we evaluated the potential for cumulative impacts of the Wahpeton Expansion Project when combined with other projects or actions in the area. Cumulative impacts represent the incremental effects of a proposed action when added to impacts associated with past, present, or reasonably foreseeable future projects, regardless of what agency or person undertakes such other actions. Although the individual impact of each separate project may be minor, the additive or synergistic effects of multiple projects could be significant. Consistent with CEQ guidelines, we have aggregated past completed actions (more than 5 years old) that shaped today's landscape into our discussion of the affected environment in section 4. Therefore, this section focuses on recent past, ongoing or current, and reasonably foreseeable future actions that might contribute to cumulative effects.

This cumulative impacts analysis uses an approach consistent with the methodology set forth in relevant guidance (CEQ, 1997, 2005; EPA, 1999). Under these guidelines, inclusion of actions within the analysis is based on identifying commonalities between the impacts that would result from the Project and the impacts likely to be associated with other potential projects.

The geographic scope for each resource is unique and is generally more localized for somewhat stationary resources such as geological and soil resources; more expansive for resources with a large geographic area, such as visual impacts and air emissions; and based on jurisdictional boundaries for resources such as socioeconomics and public lands. We evaluated cumulative impacts from a geographical perspective, recognizing that the proximity of other actions to the Project is a major predictor of whether cumulative impacts would occur. In general, the closer another action is to the Project, the greater the potential for cumulative impacts. Table 4.11-1 summarizes resource-specific geographic boundaries considered in this analysis, and the justification for each. Actions occurring outside these geographical boundaries were generally not evaluated because their potential to contribute to a cumulative impact in a significant way diminishes with increasing distance from the Project.

To avoid unnecessary discussions of insignificant impacts and projects, and to adequately address and accomplish the purposes of this analysis, the cumulative impacts analysis for the Project was conducted using the following guidelines.

Projects and activities included in this analysis are generally those of comparable magnitude or nature of impact as the Project and are expected to impact the same resources as the Project. This would include other utility projects of a similar linear nature. For the most part, this is possible when other projects are within the same general location as the Project (i.e., within one or more of the cumulative impacts geographic scopes listed in table 4.11-1). The effects of more distant projects generally are not assessed because their impacts would typically diminish with distance and thus would not significantly contribute to impacts in the area of the Project. Certain exceptions may be made where a resource is regionally or nationally rare or unique and where concern for a cumulative impact is substantial. For example, an exception is air quality, which can affect larger areas; thus, the geographic scope for air quality is larger than that of other resources (see table 4.11-1 and the associated discussion regarding resource-specific geographic scopes). Per EPA guidelines, project-specific analyses are usually conducted on the scale of counties, forest management units, or installation boundaries, whereas cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds.

The timeframe within which another planned, proposed, or ongoing project occurs could also result in a cumulative impact relative to the Project, depending on whether the impacts are temporary, short-term, long-term, or permanent. Once the effects cease, there is no longer a cumulative effect associated with the Project. As discussed in the preceding environmental analysis, most of the Project's impacts would be temporary or short-term. Notable exceptions are operational air emissions, as well as land use conversion for aboveground facilities, which are either long-term or permanent. Impacts from older projects

(completed 5 or more years ago) are considered to have been mitigated over time, with the disturbed environment having become part of the baseline character of the region described in the affected environment for each resource. As such, we have considered the impacts associated with past projects that have resulted in permanent impacts on a resource or were constructed less than 5 years ago and are currently being restored.

TABLE 4.11-1

Geographic Scope by Resource for Cumulative Impacts Associated with the Wahpeton Expansion Project

Resource	Geographic Scope	Justification for Geographic Scope
Geology and Soils	Construction workspaces and immediately adjacent areas	Impacts on soils and surficial geology would be highly localized and are not expected to extend much beyond the area of direct disturbance associated with the Project.
Groundwater, Surface Water, Wetlands, Aquatic Resources	HUC-12 Watersheds	Watersheds are natural, well-defined boundaries for surface water flow, and commonly contribute to the recharge of groundwater resources. Impacts on groundwater, surface water resources, wetlands, and aquatic resources could reasonably extend throughout a HUC-12 watershed (i.e., a detailed hydrologic unit that can accept surface water directly from upstream drainage areas and indirectly from associated surface areas such as remnant, noncontributing, and diversions to form a drainage area with single or multiple outlet points, as could the related impacts on aquatic resources and fisheries).
Vegetation, Wildlife, Special Status Species	HUC-12 Watersheds	Consideration of impacts within a HUC-12 watershed sufficiently accounts for impacts on vegetation and wildlife (including special status species) that would be directly affected by construction activities and for indirect impacts such as changes in habitat availability and displacement of transient species.
Land Use	Within 1 mile of construction workspace	Impacts on general land uses, including public recreational areas, would be restricted to the construction workspaces and the adjacent landscape up to 1 mile where indirect impacts could occur.
Visual Resources	Within 0.25 mile of the pipeline, and 0.5 mile of aboveground facilities	Assessing the impact based on the viewshed allows for the impact to be considered with any other feature that could have an effect on visual resources.
Socioeconomics	Counties where Project activities are proposed	The geographic scope of potential impact for socioeconomics was considered to include the counties affected by the Projects where most workers would be expected to reside during construction and operation of the Project. Affected counties would experience the greatest impacts associated with employment, housing, public services, transportation, traffic, property values, economy and taxes.
Environmental Justice	U.S. Census defined block groups affected by the Project	The geographic scope of potential impacts for environmental justice includes all block groups affected by the Project.
Cultural Resources	Area of Potential Effects, which typically includes overlapping impacts within the Project's footprint (direct) and within 0.25 mile of aboveground facilities (indirect)	The impact area for direct effects (physical) includes areas subject to ground disturbance, while indirect effects (visual or audible) include aboveground ancillary facilities or other project elements that are visible from historic

TABLE 4.11-1

Geographic Scope by Resource for Cumulative Impacts Associated with the Wahpeton Expansion Project

Resource	Geographic Scope	Justification for Geographic Scope
		properties in which the setting contributes to their NRHP eligibility.
Air Quality – Construction [a]	Within 0.25 mile of all active construction (pipeline, road crossing, aboveground facilities)	Air emissions during construction would be limited to vehicle and construction equipment emissions and dust, and would be localized to the Project's active construction work areas and areas adjacent to these active work areas.
Air Quality – Operation [a]	50 kilometers (about 31.1 miles) from aboveground compression facilities	We adopted the distance used by the EPA for cumulative modeling of large PSD sources during permitting (40 CFR 51, appendix W), which is a 50-kilometer radius. Impacts on air quality beyond 50 kilometers (31.1 miles) would be *de minimis*.
Noise – Construction	NSAs within 0.25 mile of any construction and within 0.5 mile of compressor stations and guided bore activities	Areas in the immediate proximity of pipeline or aboveground facility construction activities would have the potential to be affected by construction noise. NSAs within 0.5 mile of a guided bore activities could be cumulatively affected if other projects had a concurrent noise impact on the NSA.
Noise – Operation	NSAs within 1 mile of a noise-emitting permanent aboveground facility	Noise from the Project's permanent aboveground facilities could result in cumulative noise impacts on NSAs within 1 mile.

a We note that GHGs do not have a localized geographic scope. GHG emissions from the Project combined with projects all over the planet lead to increased CO_2, methane, and other GHG concentrations in the atmosphere.

Both beneficial cumulative impacts (e.g., new jobs and tax revenues) and adverse cumulative impacts (e.g., contribution to ongoing air emissions) were identified in the analysis. Where we determined that a potential for cumulative impacts exists, we quantified the impacts to the extent practicable. However, in some cases the potential impacts can only be described qualitatively. This is particularly the case for projects in the planning stages, which may be contingent on economic conditions, availability of financing, and/or the issuance of permits, or projects for which there is a lack of available information.

4.11.1 Projects and Activities Considered

Our cumulative impacts analysis looks at the potential impacts of other actions as described in relevant guidance. NEPA requires reasonable forecasting, but an agency is not required to engage in speculative analysis or to do the impractical, if not enough information is available to permit meaningful consideration. The scope of the cumulative impact assessment depends in part on the availability of information about other projects. For this assessment, other projects were identified from information provided by WBI Energy; field reconnaissance; online research; FERC staff's knowledge of other planned, pending, and ongoing jurisdictional natural gas projects; and communications with federal, state, and local agencies. Cumulative impacts were typically derived from our approximation of project boundaries as interpreted from publicly available project descriptions, maps, and aerial photography.

Appendix J and figures 4.11-1 through 4.11-4 summarize the present and reasonably foreseeable projects or actions that occur within the geographic scope of each resource area as defined in table 4.11-1. Additional discussion regarding non-jurisdictional facilities can be found in section 1.4. Section 2.1 includes additional information regarding farm taps.

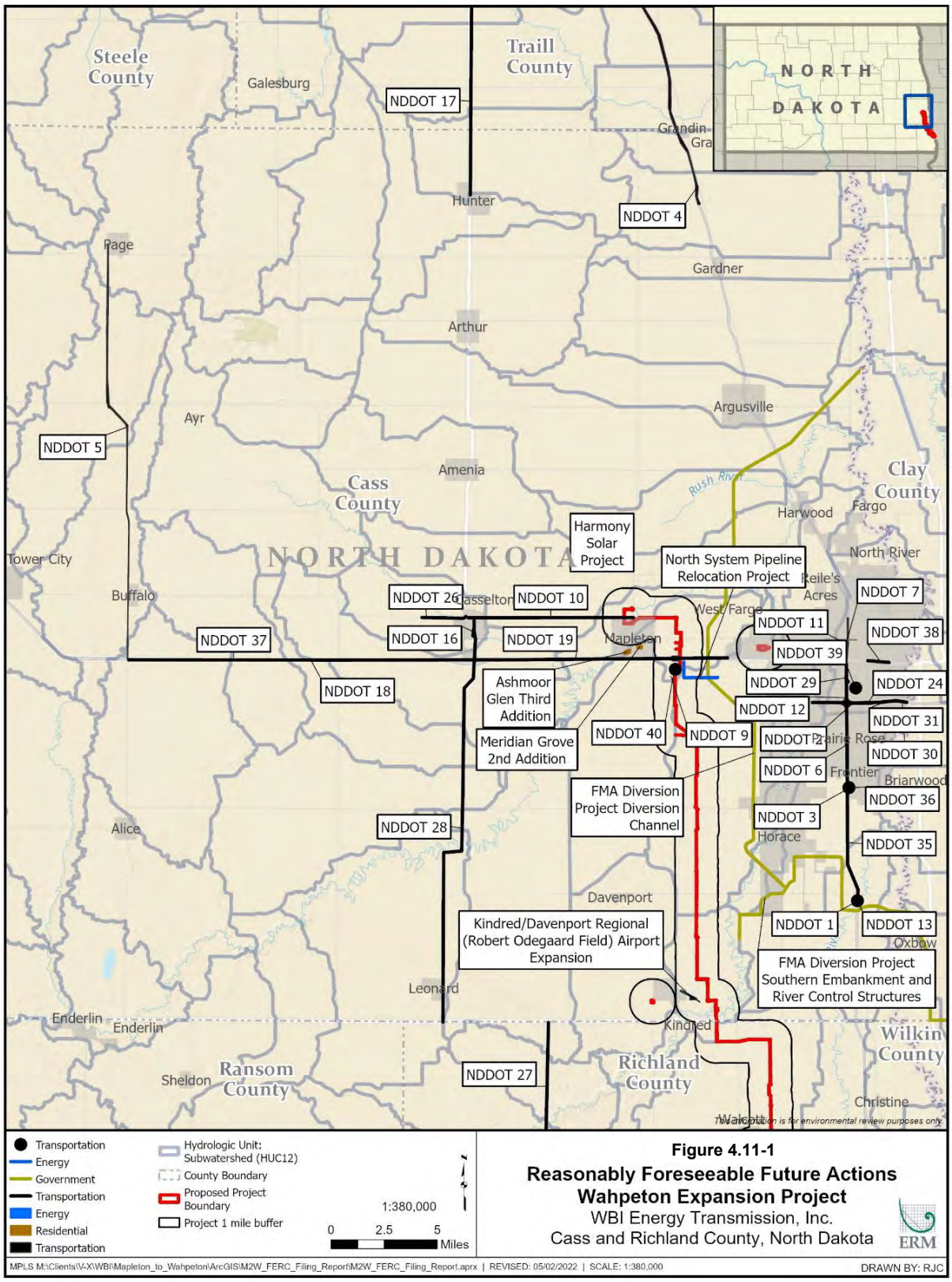


Figure 4.11-1
Reasonably Foreseeable Future Actions
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

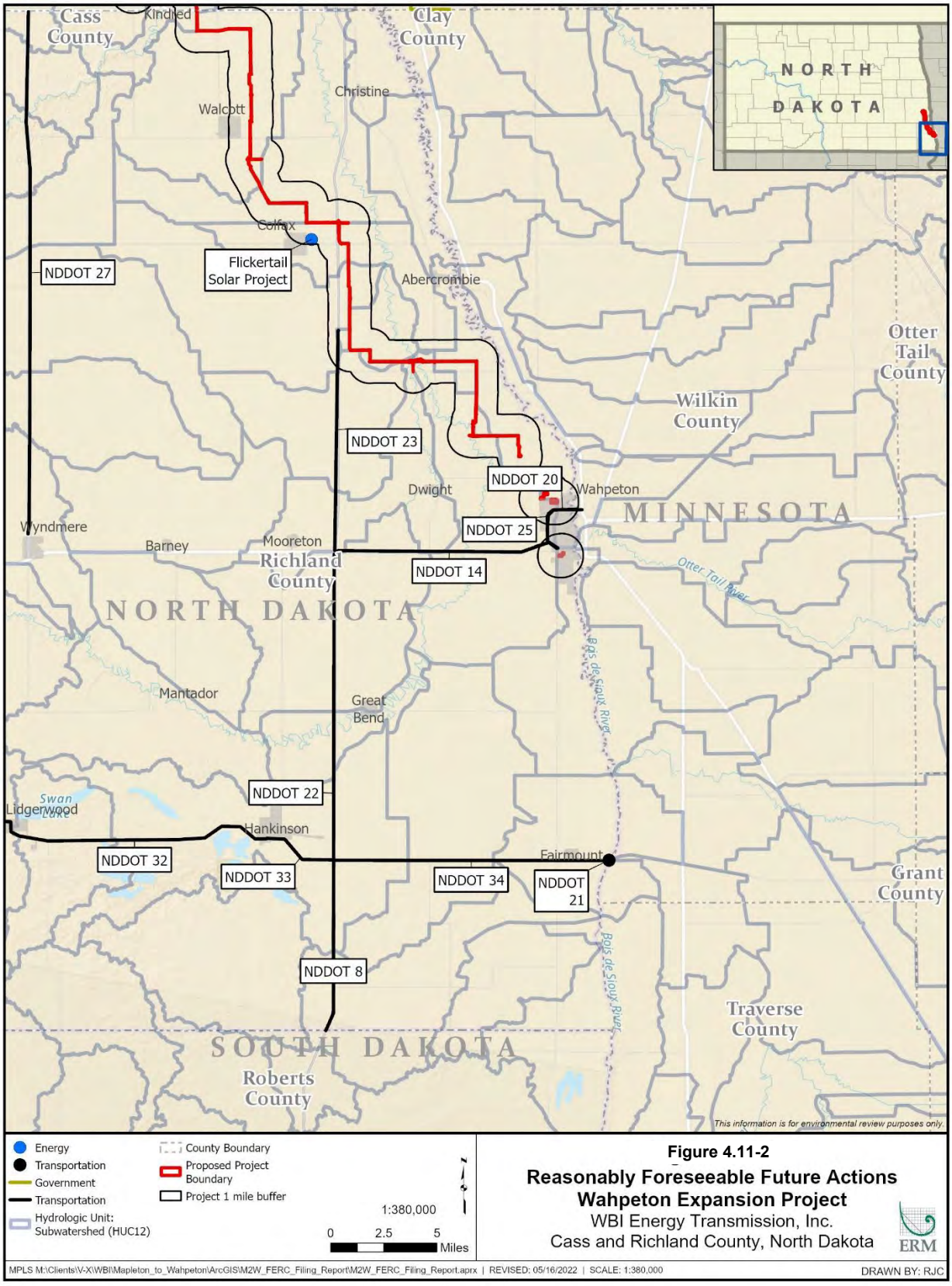
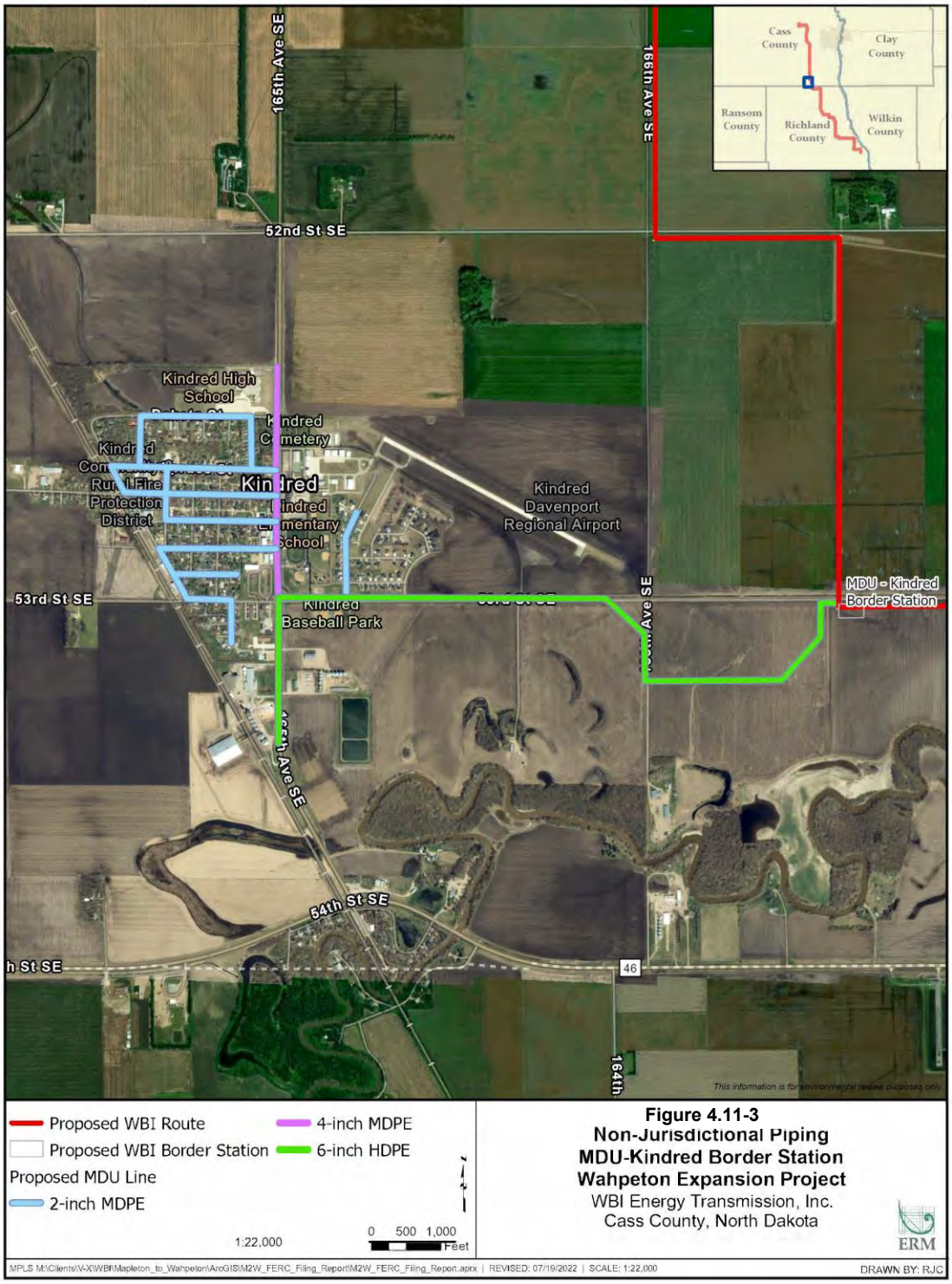


Figure 4.11-2
Reasonably Foreseeable Future Actions
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM


Cass County
Clay County
Ransom County
Richland County
Wilkin County
165th Ave SE
166th Ave SE
52nd St SE
Kindred High School
Kindred Cemetery
Kindred Rural Fire Protection District
Kindred
Kindred Elementary School
Kindred Davenport Regional Airport
53rd St SE
Kindred Baseball Park
MDU - Kindred Border Station
167th Ave SE
54th St SE
46
164th
This information is for environmental review purposes only.
Proposed WBI Route
Proposed WBI Border Station
Proposed MDU Line
2-inch MDPE
4-inch MDPE
6-inch HDPE
1:22,000
0 500 1,000 Feet
Figure 4.11-3
Non-Jurisdictional Piping
MDU-Kindred Border Station
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass County, North Dakota
ERM
MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 07/19/2022 | SCALE: 1:22,000
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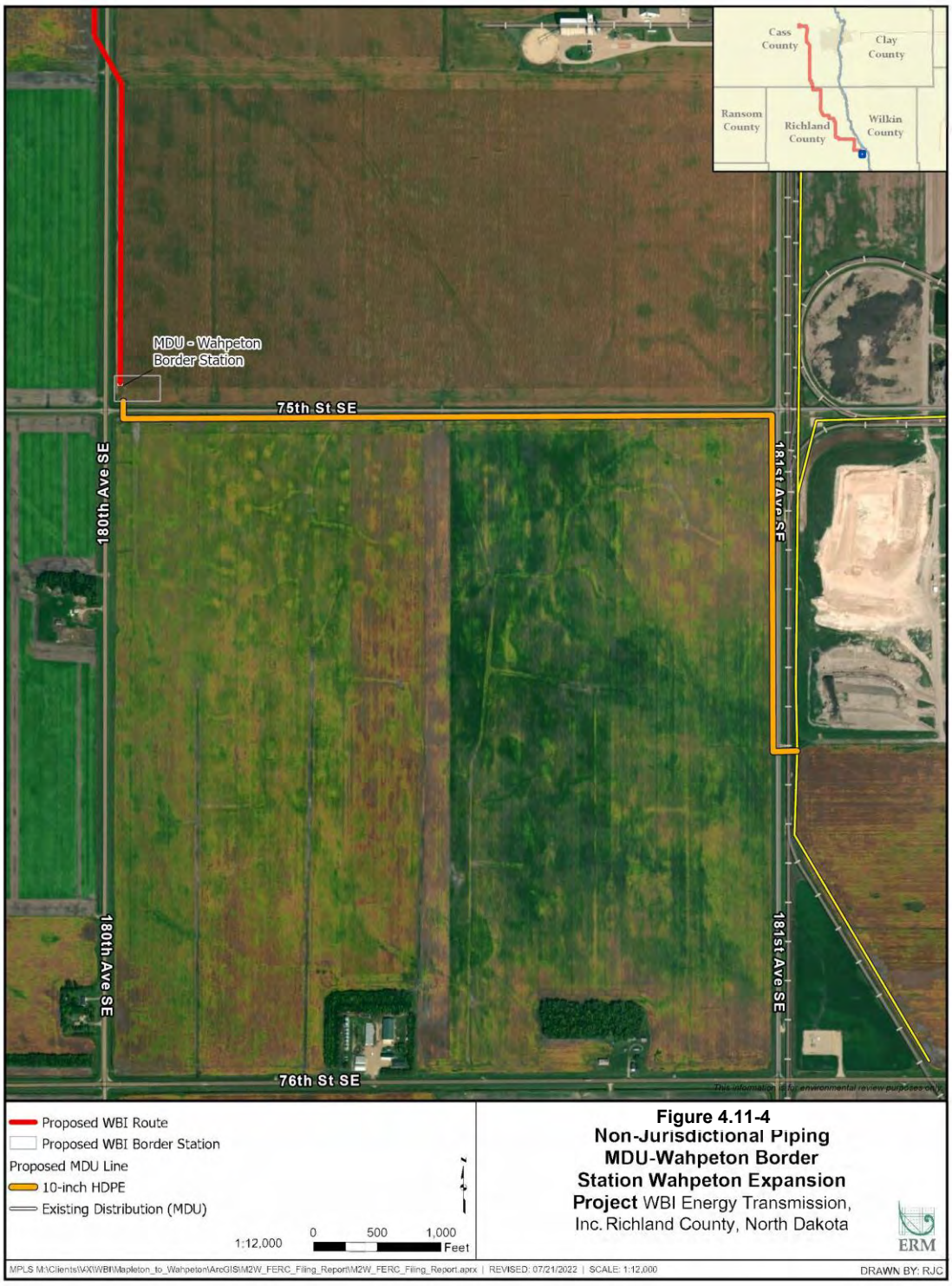

Figure 4.11-4
Non-Jurisdictional Piping
MDU-Wahpeton Border Station Wahpeton Expansion Project WBI Energy Transmission, Inc. Richland County, North Dakota

4.11.2 Potential Cumulative Impacts by Resource

The following sections address the potential cumulative impacts on specific environmental resources from the Project and the other projects identified within the cumulative geographic scope area.

4.11.1.1 Geology and Soils

Impacts on soil and geologic resources from pipelines or other linear utility projects presented in appendix J (such as the North System Pipeline Relocation Project, the non-jurisdictional pipeline distribution systems for Kindred and Wahpeton, powerlines for the non-jurisdictional distribution systems, and farm taps) would be similar to those described for the proposed Project in sections 2.3 and 2.5 of this EIS. WBI Energy does not anticipate that any blasting would be required for construction of the Project, and following construction, would restore topographic contours along the pipeline right-of-way to preconstruction conditions. Due to WBI Energy's use of its Plan and its Procedures to protect soil resources and minimize incremental impacts on soils, most Project-related impacts on soils would be temporary to short-term and minor. Impacts on current geologic and soil conditions from the other projects identified in appendix J include the installation of aboveground facilities and impervious surfaces, and construction activities such as clearing, grading, trench excavation, and backfilling. Boring activities could also physically alter geologic materials along a very narrow or discrete subsurface path. Alterations in surficial geology and soil conditions could result in or create a future landslide; however, the risk associated with landslides is low in the geographic scope area, and these effects would be largely localized to disturbed and adjacent areas. While the proponent of projects listed in appendix J would be responsible for restoration of an area, the restoration timeframe could be extended because of ground disturbance associated with the next project in any given area. Most cumulative impacts would be incremental, but repeated impacts would occur when activities are within the same work areas but at different timeframes. Repeated impacts may not be considered cumulative if the soils from the earlier projects are restored to preconstruction conditions prior to the disturbance of the next project, which is the case with some of the projects included in appendix J.

Non-FERC regulated utility projects that require soil and/or stormwater management plans by local or state regulatory agencies would also implement procedures to protect soil resources. These measures might include the installation of erosion and sedimentation control devices during and after construction and ensuring proper restoration and revegetation of disturbed areas. As a result, most pipeline and utility project-related impacts on soils would be temporary or short-term and minor. The installation of aboveground facilities and impervious surfaces would have the largest and most notable cumulative impact on soils.

Most projects are outside the defined geographic scope for geology and soil resources or would be completed prior to or after the proposed Project, therefore negating or minimizing the potential for cumulative impacts. In general, the proposed Project and other projects in the cumulative impacts area would not materially impact (i.e., permanently curtail or preclude the extraction of) marketable mineral resources or soils in the area of the Projects. As such, construction and operation of the Project, when considered with other projects in the cumulative impacts area, would not contribute significantly to cumulative impacts on geologic and soil resources.

4.11.1.2 Groundwater

Several projects (such as residential, solar farm, utility, power lines for non-jurisdictional facilities, farm taps, and transportation projects) from appendix J share the same geographic scope areas with the proposed Project and would have similar impacts to those described in section 4.3.1. The most likely cumulative impacts on groundwater are turbidity caused by shallow excavations, reduced groundwater

recharge caused by the installation of impervious structures, altered localized groundwater flow paths, and the appropriation of groundwater for construction or operational activities.

Many of the projects included in appendix J that are within the defined geographic scope for water resources would be required to obtain water use and discharge permits, implement erosion and sediment controls, and adhere to various Spill Plans as mandated by federal and state agencies, as appropriate. The impacts from the Project on groundwater would be minimized by implementing measures in WBI Energy's Plan and Procedures that minimize erosion and sedimentation, reduce compaction, and restore pre-existing grades and vegetation; as well as by measures in WBI Energy's SPCC Plan. We anticipate that any projects where construction has been completed, groundwater impacts would be trending to a restored state, and therefore, would have minimal residual impact. When combined with other projects, the minor increase in impervious surface in the considered geographic scope, changes to existing groundwater flow paths, and water withdrawals, the Project would not have significant cumulative impacts on groundwater and aquifer recharge and volume.

4.11.1.3 Surface Water and Aquatic Resources

Several projects (such as such as residential, solar farm, utility, power lines for non-jurisdictional facilities, farm taps, and transportation projects) from appendix J are within the cumulative geographic scope area for surface waters. Cumulative impacts on surface waters from projects and actions identified in appendix J would dissipate the farther they occur from the Project.

Construction of the Project and other projects in the cumulative impacts area could have direct and indirect impacts on surface water quality and flow, as well as on fish and other organisms that inhabit affected waters. These impacts could include increased sedimentation, turbidity, decreased dissolved oxygen, impaired flow, releases of chemicals and nutrient pollutants, reduced riparian cover, thermal changes, modification of habitat, and fish injury or mortality. These impacts, such as increased turbidity, would individually result in temporary to short-term impacts because they would return to baseline levels over a period of days or weeks following construction. Long-term impacts would include sedimentation that remains in the river system and the loss or alteration of riparian habitat. The proposed Project would cross waterbodies with a trenchless guided bore crossing method in compliance with its Procedures, including installation of erosion controls to prevent sedimentation and elevated turbidity, and would avoid direct impacts on waterbodies.

Increased sedimentation and turbidity resulting from potential runoff from the adjacent construction workspace and use of access roads would be mitigated through implementation of erosion control measures at the edges of the workspace and access roads. Impacts from sedimentation and turbidity from other projects listed in appendix J would be limited to the period of active construction and timeframe immediately after while project areas are stabilized and restored. Restoration activities would ensure bank vegetation resumes, per appropriate permit requirements, lessening the potential for long-term effects on waterbodies. Other projects (e.g., residential developments, solar, and road improvements) would likely be required to install and maintain BMPs required by federal, state, and local permitting authorities to minimize impacts on waterbodies, although, residential developments, powerline poles, and solar projects are not generally constructed within surface water resources. Other projects crossing Waters of the United States would also need to comply with USACE requirements. Therefore, most of the impacts on waterbodies are expected to be of short duration and/or permittable under regulations implemented by the USACE.

Once active construction is completed, the short-term impacts from other projects in the area would dissipate; however, the long-term impacts from potential sediment and loss of riparian habitat could contribute to cumulative impacts. Given that most waterbodies in the geographic scope would be affected at different times than the proposed Project and most impacts from the other projects would either be

mitigated via state and federal permitting requirements, such as the installation of BMPs, or cease to continue to impact the waterbodies (impacts are not within the same temporal scope), we conclude that construction and operation of the Project and other projects in the area would not result in significant cumulative impacts on surface water resources, fish, and other aquatic resources in the area.

4.11.1.4 Wetlands

We estimate that the projects in appendix J (such as residential, solar farm, utility, power lines for non-jurisdictional facilities, farm taps, and transportation projects) would affect numerous wetlands within the same watersheds as the proposed Project. We were unable to find quantitative data for the specific extent of impacts on wetlands from other projects. The Project's effects on wetlands are described in section 4.3.3 and would temporarily impact 10.8 acres of wetlands during construction and less than 0.1 acre during operation. The Project would cross about 22 distinct wetlands via guided bore drilling, which would minimize impacts on the wetlands. The Project would permanently fill 0.01 acre of palustrine emergent wetland in a roadside ditch for a permanent access road.

Most construction-related impacts on wetlands range from temporary to permanent, depending on the proposed action/facility and type of wetland impacted. For example, impacts on palustrine emergent wetlands from pipeline construction would be temporary because they would return to original emergent function and value shortly after construction; impacts on palustrine scrub-shrub wetlands from pipeline construction would be short to long-term because they would take 3 to 5 years to return to original scrub-shrub function and value; and impacts on palustrine forested wetlands from pipeline construction would be long-term because trees would take from 3 to 50 years or longer to become reestablished, and trees would not be allowed to become reestablished directly over the pipeline. There would also be a permanent loss of some wetland habitat where aboveground facilities or roads would be placed and operated.

Most solar projects, including the Harmony and Flickertail Solar Projects, are expected to avoid direct wetland impacts because their facilities are at discrete locations (versus long linear features), are small (e.g., 3.5 acres), and relatively flexible in placement (not dependent on connecting to another existing facility). USACE regulated in-water activities, which may be necessary for projects such as the North System Pipeline Relocation Project, the non-jurisdictional pipeline distribution systems for Kindred and Wahpeton, and the new unnamed pipeline in North Dakota, are by nature likely to impact wetlands and open water resources and would result in temporary and permanent wetland impacts. Road projects and residential development projects are expected to result in temporary and permanent wetland impacts because of their linear nature and inflexible construction limits. Indirect wetland impacts could result from these projects due to stormwater runoff from disturbed areas during construction.

Wetlands are broadly regulated under the CWA. Avoidance, minimization, compensation, and/or replacement would be required by the USACE for most impacts. WBI Energy, as well as the proponents of the other projects in the watersheds as the Project, would need to obtain or have already obtained applicable permits from the USACE and/or the NDDEQ, as applicable. Accordingly, as part of the permitting and approval process, project proponents would prepare wetland mitigation plans and provide compensatory mitigation for non-exempt wetland impacts. Additionally, measures to prevent or minimize impacts on wetlands would be adopted through permitting, such as WBI's implementation of its Procedures which contain measures to avoid and minimize impacts on wetlands.

Based on avoidance measures and compliance with WBI Energy's Procedures, the Project when combined with other projects in the cumulative impacts area would not have substantial permanent impact on sensitive wetlands and the contribution to cumulative effects would be limited and minor.

4.11.1.5 Vegetation and Wildlife

Several projects (such as such as residential, solar farm, utility, power lines for non-jurisdictional facilities, farm taps, and transportation projects) from appendix J are within the cumulative geographic scope area for vegetation and wildlife. Project activities such as clearing, grading, and installation of impervious surfaces (e.g., border station pads, access roads) would remove vegetation, alter wildlife habitat, fragment habitat, displace wildlife, and result in other potential secondary effects, such as increased population stress, predation, and the establishment or spread of invasive species. These effects would be greatest where the other projects, such as the non-jurisdictional distribution systems for Kindred and Wahpeton, are constructed within the same timeframe and areas as the Project, as described in section 4.11.1. However, even construction that does not overlap temporally can have cumulative effects, as it takes time for vegetation/habitat to return to a preconstruction state, especially forested habitats and woody vegetation that could take up to 50 years or longer to become reestablished and would not be allowed to become reestablished directly over the pipeline.

Operation of the Project would permanently affect 372.5 acres of land. A majority of this area is expected to occur within previously developed and agricultural use areas. Minimal forested habitat (1.8 acres) would be disturbed, and guided boring would reduce impacts on riparian vegetation for planned waterbody crossings. Other projects in the cumulative impacts area such as road improvements and residential development projects would remove vegetation and have both temporary and permanent cumulative impacts on wildlife.

Most projects would presumably be required to restore areas temporarily disturbed by construction, unless permanent aboveground facilities or ground altering structures are proposed, thereby minimizing some permanent impacts on wildlife and wildlife habitat. Similarly, mitigation measures implemented by the other projects would also be expected to reduce potential impacts associated with habitat fragmentation and the spread of noxious weeds. However, most of the projects in the cumulative effects area would result in some permanent land development or operational maintenance clearing; therefore, impacts would be permanent and cumulative. However, the overall magnitude of this impact on vegetation and wildlife habitat relative to the total amount of vegetated land within the affected cumulative impact area is minor.

Invasive species often flourish in areas where vegetation has been disturbed. Other projects that are adjacent to or cross the Project could potentially lead to a greater spread of invasive vegetation. WBI Energy developed a project-specific *Noxious Weed Management Plan* in coordination with the appropriate regulatory agencies to minimize the Project's contribution to invasive species infestations. Other projects in the cumulative impacts area likely also have similar plans to manage the spread of invasive species.

Cumulative impacts on vegetation and wildlife resulting from the Project and other projects would be considered minor to moderate. Impacts would be long-term to permanent where the pipelines or roads would create a new cleared and maintained rights-of-way and development projects clear larger expanses of land adjacent to or outside urban settings where wildlife would be more abundant.

4.11.1.6 Special Status Species

Several projects (such as such as residential, solar farm, utility, power lines for non-jurisdictional facilities, farm taps, and transportation projects) from appendix J are within the cumulative geographic scope area for special status species. The ESA prohibits the take of any threatened and endangered species except under federal permit or take statement. A federal permit or take statement is issued only if individual and cumulative impacts on a listed species are not significant. As such, the other federal projects in the cumulative impacts area are required to comply with section 7 of the ESA to ensure construction and operation of the facility would not jeopardize the continued existence of federally listed species. Non-

federal projects are also required to adhere to section 10 of the ESA, although the FWS has a different mechanism for evaluating and minimizing impacts.

As discussed in section 4.4.4, we have determined that the Project *would not adversely affect* federally listed species and/or their designated critical habitats. These determinations are based on consultations with the FWS and commitments from WBI Energy to adopt species-specific avoidance or conservation measures recommended by the FWS. As such, no additional mitigation is proposed, and the Project would not contribute to significant cumulative impacts on these species.

Protection of threatened, endangered, and other special status species is part of the various state permitting processes or resource reviews for many of the projects identified in appendix J. As such, we anticipate that cumulative impacts on such species have been specifically considered and reduced or eliminated through conservation and mitigation measures identified during those relevant processes and consultations.

4.11.1.7 Land Use, Visual Resources, and Recreation

Several projects (such as the non-jurisdictional pipeline distribution systems for Kindred and Wahpeton, power lines for non-jurisdictional facilities, farm taps, the Fargo-Moorhead Area Diversion project, solar projects, road improvements, and residential development projects) from appendix J are within the cumulative geographic scope area for land use, visual resources, and recreation. The construction and operation of the Project and other past, present, and reasonably foreseeable actions has or would require the temporary and permanent use of land, which has or would result in temporary and permanent impact/conversion of land use. Similar to vegetation (see section 4.11.2.5), cumulative impacts on land uses from the Project and other projects in the cumulative impacts area could occur from construction activities such as clearing, grading, and construction of buildings, structures, and/or impervious surfaces (e.g., building pads, access roads). The duration of impacts on land use would depend on the type of land cover affected and the rate at which the land can be restored to its preconstruction use and condition after construction. Pipeline project impacts on residential land, commercial/industrial land, and open water would be temporary because they would return to their preconstruction uses and conditions almost immediately after construction. Pipeline project impacts on agricultural land, open lands and emergent wetlands would be short to long-term because those areas likely would require 1 to 5 years to regain preconstruction use and composition, depending on conditions for restoration. Pipeline project impacts on forest/woodland and forested wetlands would be long-term or permanent because trees could take up to 50 years or longer to become reestablished and would not be allowed to become reestablished directly over the pipeline. Most of the projects in the cumulative affects area include new buildings, structures, and/or impervious surfaces that would permanently change the underlying land use. The proposed Project would only involve minor new aboveground facilities, which would not contribute significantly to cumulative land use impacts. The majority of the Project disturbed areas would revert to preconstruction land uses within the timeframes noted above.

The Project's facilities would add incrementally to the cumulative visual impacts through the clearing of vegetation and installation of aboveground facilities, but the overall contribution would be relatively minor given the majority of the Project's facilities would be buried (i.e., the pipeline) and adjacent to existing rights-of-way. About 51 percent of the Project would be adjacent to existing road, railroad, and/or electric transmission line rights-of-way. Collocation with existing utility or transportation corridors would contribute to widening existing corridors but would have fewer visual impacts than creating a new corridor. The corridors would be revegetated, thereby limiting the duration of many of the visual impacts associated with construction. WBI Energy would maintain 1.1 acres of forest in a non-forested state and convert 1.3 acres of agricultural land to developed land. All other land use types are anticipated to be restored after construction, thus, Project effects on land use would be minimal.

The primary long-term cumulative visual effects of the Project and other projects in the cumulative impacts area would be the new structures (such as non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton) or new permanent roads through the landscape. The Project includes new aboveground facilities that would be either minimal in scope (minor block valve sites) or not significantly different from the overall visual setting of the area (modifications to an existing compressor station). In addition, existing screening from trees and brush would further minimize visual impacts from the Project. No permanent impacts from aboveground facilities would occur on recreational or special interest areas.

Cumulative impacts on land use, visual resources, and recreation from the projects and actions identified in appendix J would dissipate the farther they occur from the Project. Some projects would provide a positive cumulative impact such as road projects that improve transportation and residential development which provides better housing opportunities for the community. Therefore, any contribution to cumulative impacts would be negligible as a result of construction and operation of the Project when combined with other projects and actions in the cumulative impacts area.

4.11.1.8 Cultural Resources

The projects in appendix J that are within the cumulative impacts area for cultural resources include those that overlap the Project's workspace or, for indirect effects, are closely adjacent (such as the non-jurisdictional pipeline distribution systems for Kindred and Wahpeton, power lines for non-jurisdictional facilities, farm taps, and road improvements). WBI Energy has developed a Project-specific plan to address unanticipated discoveries of cultural resources and human remains during construction for the proposed Project.

Other projects that are defined as federal actions (e.g., the Fargo-Moorhead Area Diversion project) would have to adhere to section 106 of the NHPA and include mitigation measures designed to avoid or minimize additional impacts on cultural resources. Where impacts on significant cultural resources are unavoidable, mitigation (e.g., recovery of data, curation of materials) would take place before construction. Non-federal actions would need to comply with any mitigation measures required by the state.

Given the state and federal laws and regulations that protect cultural resources mentioned previously, it is not likely that there would be significant cumulative impacts on historic properties resulting from the Project when considering the other projects in the cumulative impacts area.

4.11.1.9 Socioeconomics

Although the timing of many of the projects in appendix J (such as such as the non-jurisdictional pipeline distribution systems for Kindred and Wahpeton, power lines for non-jurisdictional facilities, farm taps, the Fargo-Moorhead Area Diversion project, solar projects, road improvements, and residential development projects) are unknown, impacts on population and employment, demand for housing and public services, transportation, and government revenue from sales and payroll taxes would generally be temporary and primarily limited to the period of construction. These impacts would increase if more than one project is built at the same time. Most of the projects in the cumulative impacts area would be expected to utilize local workforce, which would not alter housing, transportation, and public service demands. If an influx of workforces is required to be brought into the area that may potentially strain housing and increase demands on public services, such as police, fire, and medical services. An increase in construction workforce would also spike employment levels (assuming a percentage of the local population is utilized) and the local economy and would have a beneficial, short-term impact on employment, local goods and service providers, and state and local governments in the form of sales tax revenues.

Construction of the Project could result in temporary impacts on road traffic in some areas and could contribute to cumulative traffic impacts if other projects are scheduled to take place at the same time and in the same area. WBI Energy would use the local road and highway network to access the construction right-of-way, to the extent practicable. We expect the other projects listed in appendix J would also use existing public roads. Increased use of local roadways from multiple projects along with ongoing agricultural machinery could accelerate degradation of roadways and require early replacement of road surfaces. WBI Energy and the other project sponsors in the geographic scope of influence would be required to adhere to local road permit requirements (which may have provisions for road damage repairs or compensation) and road weight restrictions. Therefore, the Project when combined with the other projects in the cumulative impacts area would not contribute to any long-term cumulative impact on the transportation infrastructure, as only a one new permanent employee would be required to operate the Project. However, the other projects such as the new residential developments, solar farm construction, and construction of the non-jurisdictional distribution systems for Kindred and Wahpeton in the cumulative impact area would have an incremental and cumulative impact on roadways in the area. The number of road improvement projects listed in appendix J affirm the need for improved transportation infrastructure.

4.11.1.10 Environmental Justice

Based on the scope of the Project and our analysis of the Project's impacts on the environment as described throughout this EIS, we have determined Project-related impacts on visual resources, socioeconomics, traffic, noise, and air quality may adversely affect the identified environmental justice communities. Therefore, cumulative impacts on environmental justice communities could occur for these resources. Cumulative impacts on environmental justice communities are not present for other resource areas such as geology, groundwater, wetlands, wildlife, or cultural resources due to the minimal overall impact the Project would have on these resources. Projects included in the consideration of cumulative impacts are listed in appendix J. The Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25 are within environmental justice communities crossed by the Project and could be under construction at the same time as the Project.

The Project's facilities would contribute to cumulative visual impacts through the clearing of vegetation and installation of aboveground facilities. Modifications to the existing Mapleton Compressor Station, including new Block Valve 1 and associated pig launcher/receiver facilities (which would be constructed within the fence line of the existing compressor station), would be within 1 mile of an environmental justice community. Therefore, visual impacts on environmental justice communities from the Mapleton Compressor Station modifications (including new Block Valve 1) would be minor and consistent with the current visual landscape. The Project would parallel the North Country National Scenic Trail for about 2.8 miles and cross the trail at MP 42.4 via a guided bore. The North Country National Scenic Trail, would be about 1.1 miles south of the proposed pipeline and Block Valve 5 and associated pig launcher/receiver. According to WBI Energy, Block Valve 5 may be visible from the trail. No visual screening is proposed. However, due to the distance and small footprint of the block valve, visual impacts on environmental justice communities from Block Valve 5 and associated pig launcher/receiver would be less than significant. Four contractor yards would be within environmental justice communities (Kost Yard, Comstock South Yard, Comstock North Yard, and Wahpeton City Yard). The contractor yards would be largely within current industrial areas. Any visual impacts would be limited to construction of the Project. The overall contribution of the Project to cumulative visual impacts would be relatively minor given the majority of the Project's facilities would be below ground (i.e., pipeline facilities) and adjacent to existing rights-of-way. The Project's facilities along with the Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25, which fall within

environmental justice communities crossed by the Project, would contribute to cumulative visual impacts on environmental justice communities.

Impacts on population and employment, demand for housing and public services, and government revenue from sales and payroll taxes would generally be temporary and primarily limited to the period of construction. These impacts could contribute to cumulative impacts on these resources should the Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25 be built at the same time. An influx of construction workers associated with projects that fall within environmental justice communities could temporarily increase demand for housing and increase calls for public services, such as police, fire, and medical services. The increase in construction workforce would also have a beneficial, short-term impact on employment, local goods and service providers, and state and local governments in the form of sales tax revenues. The Project along with the projects listed in appendix J would contribute to both beneficial and adverse cumulative socioeconomic impacts on environmental justice communities. Due to the temporary nature of these impacts, impacts on environmental justice communities would be less than significant.

Construction of the Project, along with the Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25, could result in temporary impacts on road traffic and could contribute to cumulative traffic impacts if other projects in appendix J are scheduled to take place at the same time within the same geographic scope. Depending on the location of the project facility, this increased traffic would impact individuals from environmental justice communities. It is anticipated that crews would largely avoid peak commuting time by traveling to and from the Project area early in the morning and later in the evening. In addition, these impacts would be limited to periods of active construction over the course of a 7-month construction period. WBI Energy would utilize flagmen and signage to alert motorists of Project activities and detours, where needed, and follow traffic control measures (e.g., weight and speed limits) to ensure the safety of construction personal and motorists. Because traffic would only increase temporarily during construction, overall cumulative traffic impacts on environmental justice communities would be less than significant.

Construction of the Project, along with the Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25, would temporarily increase air quality impacts surrounding the construction workspaces due to emissions from the combustion engines used to power construction equipment, vehicle emissions traveling to and from the construction sites, and fugitive emission dust resulting from equipment movement on dirt roads and earth-disturbing activities. The potential for cumulative construction emissions impacts would be greatest during site preparation when fugitive dust production would likely be at its peak should projects from appendix J be constructed at the same time. Construction emissions would cease with the end of construction; thus, the period of influence for cumulative air quality impacts would be temporary (weeks to months at each location). Based on the short-term nature of construction, the cumulative air quality impacts on environmental justice communities during construction would not be significant.

Operational air dispersion modeling conducted for the Project indicates that air emissions would not exceed significant impact levels. The Project would negligibly contribute to additional operational air quality impacts; however, all facilities would be required to be in compliance with all applicable federal air quality permitting programs. The Project would not cause or significantly contribute to an exceedance of the NAAQS and would not result in a significant impact on air quality in environmental justice communities in the region.

Construction of the Project and the Fargo-Moorhead Area Diversion project, non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton, both residential developments, the Flickertail Solar, and transportation projects 20, 23, and 25 could require the use of construction equipment that would generate noise. Cumulative impacts on noise could occur where the location and timing of those noise effects overlap. Three 24-hour guided bore crossings (Maple River, I-94, and I-29), with NSAs within 0.5 mile, would be within environmental justice communities. The estimated noise at these locations would not exceed our recommended 55 dBA Ldn. The estimated operational noise levels of the Project would be below our recommended level of 55 dBA Ldn. We did not identify any projects that would contribute to operational noise impacts in the cumulative impact area for the Project's compressor stations and conclude that operation of the Project would not contribute cumulative noise impacts. The construction and operation of the Projects would not result in significant cumulative noise impacts on local residents and the surrounding communities, including environmental justice populations.

Construction and operation of the Project would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources and would contribute incrementally to future climate change impacts. While the climate change impacts taken individually may be manageable for certain communities, the impacts of compounded extreme events (such as simultaneous heat and drought, or flooding associated with high precipitation on top of saturated soils) may exacerbate preexisting community vulnerabilities and have a cumulative adverse impact on environmental justice communities. This EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.[60]

As described throughout this EIS, the proposed Project would have a range of impacts on individuals living in the vicinity of the Project facilities, including environmental justice populations. Based on our analysis, environmental justice communities in the study area would experience cumulative impacts on socioeconomics, traffic, visual, noise, air quality, and GHG related to the Project and the additional projects listed in appendix J. The overall project contribution to cumulative impacts on environmental justice communities related to socioeconomics, traffic, visual resources, noise, and air quality would be less than significant.[61]

4.11.1.11 Air Quality

Construction

Several projects (such as the non-jurisdictional power lines and pipeline distribution systems for Kindred and Wahpeton and transportation project 10) from appendix J are within the cumulative geographic scope area for air quality during construction. Construction of the Project would temporarily increase air quality impacts surrounding the construction workspaces due to emissions from the combustion engines used to power construction equipment, vehicle emissions traveling to and from the construction sites, and fugitive emission dust resulting from equipment movement on dirt roads and earth-disturbing activities. The potential for cumulative construction emissions impacts would be greatest during site preparation when fugitive dust production would likely be at its peak. WBI Energy has prepared a project-specific *Fugitive Dust Control Plan*. Construction emissions would cease with the end of construction; thus, the period of influence for cumulative air quality impacts during construction of the Project and other projects in the cumulative impacts area would be temporary (weeks to months at each location). Other projects in the cumulative impacts area may implement mitigation measures to minimize construction impacts on air quality such as applying water or dust control chemicals to minimize fugitive dust and/or by complying

60 See Order on Draft Policy Statements, 178 FERC ¶ 61,197 (2022).

61 It should be noted that this is not considering climate change or GHG emissions because no determination on significance has been made.

with applicable EPA mobile source emission performance standards, including use of equipment manufactured to meet these standards. In addition, construction emissions would also disperse within the airshed and diminish in concentration with distance from active construction areas.

Based on the short-term nature of construction and the implementation of appropriate mitigation measures, the cumulative impacts on air quality due to construction of these facilities would not be significant. Residents within the impact area may experience localized, minorly to moderately elevated levels of fugitive dust and tailpipe emissions near the construction areas. Due to the short duration of construction activities, implementation of appropriate mitigation measures, and minimal concurrent projects associated with construction, we determined that cumulative impacts on air quality due to construction would be negligible.

Operation

As no additional combustion equipment is proposed to be installed for the Project, operational impacts on air quality are expected to be negligible and not contribute to cumulative impacts within the geographical scope. All other projects within the area would be required to follow all applicable federal air quality permitting programs.

4.11.1.12 Noise

Construction

Construction of the Project and other projects and actions in appendix J (such as the non-jurisdictional distribution systems for Kindred and Wahpeton, power lines for the non-jurisdictional facilities, farm taps, and transportation projects) could require the use of heavy equipment, bore rigs and other equipment and vehicles, all of which would generate noise. The Project's construction noise would attenuate quickly as the distance from the construction site increases.

Construction would generally not affect nighttime noise levels, as work would be limited to 7 a.m. to 7 p.m., except for 6 bore locations and specific limited construction activities such as tie-ins and hydrostatic testing. With our recommendation in section 4.9, the estimated noise generated from the Project would not result in significant noise impacts on local residents and the surrounding communities.

Operation

The estimated operational noise levels of the Project would be below our recommended level of 55 dBA L_{dn}. Noise decreases logarithmically with increasing distance from a noise source; therefore, cumulative operational noise impacts would only occur where other facilities or activities would occur very close to the Project's noise-emitting facilities (i.e., compressor stations). We did not identify any projects that would contribute to operational noise impacts in the cumulative impact area for the Project and conclude that operation of the Project would not contribute significantly to existing noise in the area.

4.11.3 Conclusions on Cumulative Impacts

Construction of the Wahpeton Expansion Project, in addition to other projects within geographic scopes of analysis, could have minor cumulative impacts on a range of environmental resources, as discussed above. The majority of the cumulative impacts associated with the Project and with the projects listed in appendix J would be minor and temporary during construction. However, some long-term cumulative impacts would occur in forested areas and associated wildlife habitats. Some cumulative long-term benefits include new jobs and wages, purchases of goods and materials, and tax revenues. For the federal projects, there are laws and regulations in place that protect waterbodies and wetlands, threatened and endangered species, and historic properties, and limit impacts from air and noise pollution. We only have limited information about potential or foreseeable private projects in the region. For most resources,

state laws and regulations will apply to private projects and mitigate cumulative effects. Given planned Project BMPs, design features, and mitigation measures that would be implemented, and the federal and state laws and regulations protecting resources that would apply to the other projects listed in appendix J, we conclude that when added to other present and reasonably foreseeable future actions, cumulative impacts on environmental resources within the geographic scopes affected by the Project would not be significant.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF THE ENVIRONMENTAL ANALYSIS

The conclusions and recommendations presented in this section are those of FERC environmental staff. We conclude that construction and operation of the Wahpeton Expansion Project would result in limited adverse environmental impacts. Most adverse environmental impacts would be temporary or short-term during construction and have minimal effects on existing land use as new Project facilities would be added within an area characterized by open agricultural land. This determination is based on a review of the information provided by WBI Energy and further developed from data requests; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies as well as individual members of the public.

Overall, Commission staff conclude that approval of the Project would not result in significant environmental impacts, with the exception of climate change impacts resulting from GHG emissions. We also conclude that no system, route, or other alternative, except for potential advantages associated with the ongoing analyses and consideration of the Wild Rice River Route Alternative - MP 55, which we are recommending, would provide a significant environmental advantage over the Project as proposed. Therefore, we conclude that the proposed Project, with our recommended mitigation measures, is the preferred alternative to meet the Project objectives.

5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission authorizes the Wahpeton Expansion Project, we recommend that the following measures be included as specific conditions in the Commission's Order. We conclude that these measures would further mitigate the environmental impact associated with construction and operation of the Wahpeton Expansion Project.

1. WBI Energy shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the environmental impact statement (EIS), unless modified by the Order. WBI Energy must:
    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of OEP, or the Director's designee, **before using that modification**.
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:
    a. the modification of conditions of the Order;
    b. stop-work authority; and
    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or

mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, WBI Energy shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, WBI Energy shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

   WBI Energy's exercise of eminent domain authority granted under Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. WBI Energy's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. WBI Energy shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

   This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;

   b. implementation of endangered, threatened, or special concern species mitigation measures;

   c. recommendations by state regulatory authorities; and

   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the authorization and before construction begins**, WBI Energy shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. WBI Energy must file revisions to the plan as schedules change. The plan shall identify:

a. how WBI Energy will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;

b. how WBI Energy will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;

e. the location and dates of the environmental compliance training and instructions WBI Energy will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);

f. the company personnel (if known) and specific portion of WBI Energy's organization having responsibility for compliance;

g. the procedures (including use of contract penalties) WBI Energy will follow if noncompliance occurs; and

h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

   i. the completion of all required surveys and reports;
   ii. the environmental compliance training of onsite personnel;
   iii. the start of construction; and
   iv. the start and completion of restoration.

7. WBI Energy shall employ at least one EI per construction spread. The EIs shall be:

   a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

   b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

   c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

   d. a full-time position, separate from all other activity inspectors;

   e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

   f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, WBI Energy shall file updated status reports with the Secretary on a **weekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

   a. an update on WBI Energy's efforts to obtain the necessary federal authorizations;

b. the construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;

c. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

d. a description of the corrective actions implemented in response to all instances of noncompliance;

e. the effectiveness of all corrective actions implemented;

f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and

g. copies of any correspondence received by WBI Energy from other federal, state, or local permitting agencies concerning instances of noncompliance, and WBI Energy's response.

9. WBI Energy shall develop and implement an environmental complaint resolution procedure, and file such procedure with the Secretary, for review and approval by the Director of OEP, or the Director's designee. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the Project and restoration of the right-of-way. **Prior to construction**, WBI Energy shall mail the complaint procedures to each landowner whose property will be crossed by the Project.

   a. In its letter to affected landowners, WBI Energy shall:

      i. provide a local contact that the landowners should call first with their concerns; the letter should indicate how soon a landowner should expect a response;

      ii. instruct the landowners that if they are not satisfied with the response, they should call WBI Energy's Hotline; the letter should indicate how soon to expect a response; and

      iii. instruct the landowners that if they are still not satisfied with the response from WBI Energy's Hotline, they should contact the Commission's Landowner Helpline at 877-337-2237 or at LandownerHelp@ferc.gov.

   b. In addition, WBI Energy shall include in its weekly status report a copy of a table that contains the following information for each problem/concern:

      i. the identity of the caller and date of the call;

      ii. the location by milepost and identification number from the authorized alignment sheet(s) of the affected property;

      iii. a description of the problem/concern; and

      iv. an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

10. WBI Energy must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities**. To obtain such authorization, WBI Energy must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

11. WBI Energy must receive written authorization from the Director of OEP, or the Director's designee, **before placing the Project into service**. Such authorization will only be granted

following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

12. **Within 30 days of placing the authorized facilities in service**, WBI Energy shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or

    b. identifying which of the conditions in the Order WBI Energy has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

13. **Within 5 days of receipt of a water quality certification issued by North Dakota Department of Environmental Quality, Division of Water Quality**, WBI Energy shall file the complete certification, including all conditions, for review by the Director of OEP, or the Director's designee, under 40 C.F.R. § 121.9. All conditions attached to the water quality certification except those that the Director of OEP, or the Director's designee, may identify as waived pursuant to 40 C.F.R. § 121.9, constitute mandatory conditions of this Certificate Order. **Prior to construction**, WBI Energy shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.

14. **Prior to the end of the draft EIS comment period,** WBI Energy shall incorporate the Wild Rice River Route Alternative - MP 55 into the Project route, as depicted in figure 3.3-1 of the draft EIS. WBI Energy shall file with the Secretary revised alignment sheets and updated land use and resource tables. WBI Energy shall also provide documentation that newly affected landowners have been notified in accordance with 18 CFR 157.6(d). (*Section 3.3.1*)

15. **Prior to construction**, WBI Energy shall file with the Secretary, the specific surface water source and volume of water anticipated from each source for hydrostatic testing, dust suppression, and drilling fluid for guided bore operations, for review and written approval by the Director of OEP, or the Director's designee. *(Section 4.3.2)*

16. WBI Energy shall **not begin** construction activities **until**:

    a. WBI Energy files with the Secretary the results of updated consultation with the FWS concerning the Wild Rice River Route Alternative – MP 55 and any new species that may have been listed project-wide;

    b. if required, the staff completes any additional ESA consultation with the FWS; and

    c. WBI Energy has received written notification from the Director of OEP, or the Director's designee, that construction or use of mitigation may begin. *(Section 4.4.4)*

17. WBI Energy shall **not begin** construction of facilities and/or use of all contractor yards or temporary workspaces and new or to-be-improved access roads **until**:

    a. WBI Energy files with the Secretary:

        i. remaining cultural resources survey reports;

        ii. site evaluation reports and avoidance/monitoring or treatment plans, as required; and

        iii. comments on the cultural resources reports and plans from the North Dakota SHPO.

b. The ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and

c. The FERC staff reviews and the Director of OEP, or the Director's designee, approves the cultural resources reports and plans, and notifies WBI Energy in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CUI//PRIV-DO NOT RELEASE**." *(Section 4.6)*

18. **Prior to construction of the Sheyenne River guided bore crossing**, WBI Energy shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at NSAs nearest to the Sheyenne River guided bore entry and exit points. **During drilling operations**, WBI Energy shall implement the approved plan, monitor noise levels, document the noise levels in the construction status reports, and restrict the noise attributable to the drilling operations to no more than a day-night sound level (L_{dn}) of 55 decibels on the A-weighted scale (dBA) at the NSAs. *(Section 4.9.2)*

APPENDIX A

DISTRIBUTION LIST

Federal Agencies

Advisory Council on Historic Preservation, DC

Office of Federal Programs
John Eddins

Army Corps of Engineers, MN

St. Paul District
Attn: Civil Works

Army Corps of Engineers, ND

Omaha District
Jason Renschler
Jeremy Thury

Army Corps of Engineers, NE

Omaha District
Reece Nelson, Natural Resource Specialist

Department of Agriculture, DC

Conservation and Environmental Program Division, FSA
Nell Fuller, National Environmental Compliance Manager
Forest Service-Ecosystem Management Coordination
Steven Stadleman, Assistant Director, NEPA

Department of Agriculture, ND

Natural Resource Conservation Service
Todd Hagel, Assistant State Conservationist

Department of Commerce, MD

NOAA National Marine Fisheries Service
NOAA NEPA Coordinator

Department of Energy, DC

Division of Natural Gas Regulatory Activities
Amy Sweeney, Director
Office of Oil & Natural Gas
Brian Lavoie

Department of Health and Human Services, DC

Safety and Occupational Health
Murray Carter

Department of Homeland Security, DC

U.S. Customs and Border Protection
Christopher Oh, Branch Chief

Department of Housing and Urban Development, DC

Office of Environment and Energy
Danielle Schopp, Community Planner

Department of Justice, DC

Environment and Natural Resources Division
Stephen Finn, NEPA Coordinator

Department of the Interior, CO

Bureau of Land Management
FERC Contact
National Park Service
Patrick Walsh, Chief, Environmental Planning and Compliance Branch

Department of the Interior, MI

National Park Service
Ken Hendrickson, Trail Manager – North County National Scenic Trail
Christopher Loudenslager, Superintendent

Department of the Interior, ND

Bureau of Land Management
Loren Wickstrom, Field Manager
Chelsie Splichal, Realty Specialist

Department of the Interior, MT

Bureau of Land Management
Nate Arave, Acting District Manager

Department of the Interior, VA

Bureau of Indian Affairs
BJ Howerton
Bureau of Ocean Energy Management
Dr. Jill Lewandowski, Chief, Division of Environmental Assessment
Bureau of Safety and Environmental Enforcement
David Fish, Chief, Environmental Compliance Division
U.S. Geological Survey
Esther Eng, Chief, Environmental Management Branch

Department of the Interior

U.S. Fish and Wildlife Service
Jessica Johnson
Drew Becker, North Dakota Ecological Services Supervisor
Jacob Krebsbach
Patrick Fitzmorris, Project Lead
Kurt Thompkins, District Manager

Department of Transportation, DC

Office of Assistant Secretary for Transportation Policy
Camille Mittelholtz, Environmental Policy Team Coordinator
Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety
William Schoonover, Associate Administrator for Hazardous Materials Safety

Environmental Protection Agency, DC

Cindy Barger, Director, NEPA Compliance Division

Environmental Protection Agency, CO

Region 8, NEPA Branch
Philip Strobel, Chief
Laura Margason, Lead Reviewer

National Center for Environmental Health, GA
Sharunda Buchanan, Director, Division of Emergency and Environmental Health Services

Native American Tribes

Steve Vance, Tribal Historic Preservation Office, Cheyenne River Sioux Tribe, ND
Harold Frazier, Chairman, Cheyenne River Sioux Tribe, ND
Michael J. Black Wolf, Tribal Historic Preservation Office, Fort Belknap Indian Community, MT
Andrew Werk Jr., President, Fort Belknap Indian Community, MT
Dyan Youpee, Tribal Historic Preservation Office, Fort Peck Assiniboine & Sioux Tribes, MT
Floyd Azure, Chairman, Fort Peck Assiniboine & Sioux Tribes, MT
Devin Oldman, Tribal Historic Preservation Office, Northern Arapaho Nation, WY
Ben Ridgley, Tribal Historic Preservation Office, Northern Arapaho Nation, WY
Dean Goggles, Chairman, Northern Arapaho Nation, WY
Roy Brown, Chairman Northern Arapaho Nation, WY
Teanna Limpy, Tribal Historic Preservation Office, Northern Cheyenne Tribe, MT
Rynalea Whiteman Pena, President, Northern Cheyenne Tribe, MT
Tom Brings, Tribal Historic Preservation Office, Oglala Sioux Tribe, SD
Kevin Killer, President Oglala Sioux Tribe, SD
Ben Rhodd, Tribal Historic Preservation Office Rosebud Sioux Tribe, SD
Rodney Bordeaux, President, Rosebud Sioux Tribe, SD
Dianne Desrosiers, Tribal Historic Preservation Office, Sisseton-Wahpeton Oyate, SD
Donovan White, Chairman, Sisseton-Wahpeton Oyate, SD
Dr. Erich Longie, Tribal Historic Preservation Office, Spirit Lake Tribe, ND
Peggy Cavanaugh, ChairpersonSpirit Lake Tribe, ND
Jon Eagle, Tribal Historic Preservation Officer, Standing Rock Sioux Tribe, ND
Janet Alkire, ChairmanStanding Rock Sioux Tribe, ND
Travis Hallam, Director, TAT Pipeline Authority, ND
Frankie Lee, TAT Pipeline Authority, ND
Pete Coffey, Director, Tribal Historic Preservation Office, Three Affiliated Tribes, ND
Mark Fox, Chairman, Three Affiliated Tribes, ND
Jeffery Desjarlais, Tribal Historic Preservation Office, Turtle Mountain Band of Chippewa Indians, ND
Jamie Azure, Chairman, Turtle Mountain Band of Chippewa Indians, ND
Kip Spotted Eagle, Tribal Historic Preservation Office, Yankton Sioux Tribe, SD
Robert Flying Hawk, Chairman, Yankton Sioux Tribe, SD

Federal Representatives and Senators

North Dakota

Senate
Senator Joe Hoeven
Senator Kevin Kramer

Congress
Congressman Kelly Armstrong

North Dakota

Senate

Tony Eberhand, Chief of Staff, office of Senator John Hoeven
Jessica Lee, State Director, office of Senator John Hoeven
Eric Gustafson, Energy Policy Advisor, office of Senator John Hoeven
Chris Marohl, Senior Policy Advisor, office of Senator Kevin Cramer
Micah Chamber, Legislative Director, office of Senator Kevin Cramer

Congress

Roz Leighton, Chief of staff, office of Congressman Kelly Armstrong
Mary Christy, State Director, office of Congressman Kelly Armstrong
Darrell Nitschke, Western Dakota Field Director, office of Congressman Kelly Armstrong
Casey Fitzpatrick, Deputy Chief of Staff, office of Congressman Kelly Armstrong

State Representatives and Senators

North Dakota

Senate

Senator Mark F. Weber, Senator, North Dakota Senate, District 22
Senator & Minority Leader Joan Heckaman
Senator Larry Luick
Senator Jessica Unruh
Mark Gruman, Chief of Staff, North Dakota Senator Kevin Cramer
Jason Stverak, Dept. Chief of Staff, North Dakota Senator Kevin Cramer
Lisa Gibbens, State Director, North Dakota Senator Kevin Cramer
Michael Kelsch, SE Regional Representative, North Dakota Senator Kevin Cramer

House of Representatives

Representative Michael Howe
Representative Brandy Pyle
Representative Alisa Mitskog
Representative Cynthia Schreiber-Beck
Representative Chet Pollert
Representative Todd Porter
Senator Rich Wardner
Senator Curt Kreun
Representative Joshua Boschee

State Agencies

North Dakota

North Dakota Petroleum Council
Ron Ness, President
Bank of North Dakota
Todd Steinwand, President and Chief Executive Officer
Kelvin Hullet, Market Manager, Economic Development, and Government Program
North Dakota Department of Transportation
North Dakota Department of Agriculture

Doug Goehring, Agriculture Commissioner
John Schneider, Marketing & Information Division Director
Tom Bodine, Deputy Commissioner
North Dakota Department of Commerce
James Leiman, Commissioner
Shawn Kessel, Deputy Commissioner
North Dakota Department of Emergency Services
Cody Shultz, Director, Homeland Security Division
Amy Anton, Response Chief
North Dakota Department of Environmental Quality
James L Semerad, Director, Division of Air Quality
North Dakota Department of Health
Karl Rockerman, Division of Water Quality
Peter Wax, Division of Water Quality
Karl Rockeman, Director, Division of Water Quality
North Dakota Game and Fish Department
Steve Dyke, Conservation Supervisor
Greg Link, Chief, Conservation & Communication Division
North Dakota Heritage Center
Claudia Berg, Director, State Historic Preservation Officer
Fern Swenson, Director, State Historic Preservation Officer
North Dakota Office of the Attorney General
Wayne Stenehjem, Attorney General
North Dakota Office of the Governor
Doug Burgum, Governor
Brent Sanford, Lt. Governor
Jace Beehler, Policy Director,
Reice Haase, Senior Policy Advisor
North Dakota Parks and Recreation Department
Kathy Duttenhefner, Coordinator/Biologist II
Christine Dirk
North Dakota Pipeline Authority
Justin Kringstad, Director
North Dakota State Water Commission
Ashley Persinger
Jon Patch, Division Director, Water Appropriations
Gerald R. Heiser
State Historical Society of North Dakota, Archaeology and Historic Preservation Division
Andrew Clark, Chief Archaeologist

County Agencies

North Dakota

Cass County
Robert Wilson, County Administrator
Chad M. Peterson, Commissioner, Chair Cass County Commission
Mary Scherling, Commissioner, District 5
Duane Breitling, Commissioner, Cass County Commission
Jim Kapitan, Commissioner Cass County Commission
Rick Steen, Commissioner Cass County Commission

Jim Prochniak, Emergency Manager, Cass County Emergency Management
Jason Benson, County Engineer Cass County Engineer
Grace Puppe, County Planner Cass County Planning Office
Jesse Jahner, Sheriff Cass County Sheriff's Office
Carol Harbeke Lewis, Secretary-Treasurer, Cass County Water Resource District
Stanley Wolf, Director, Cass County Weed Control

Richland County

Sandy Fossum, County Auditor
Jill Breuer, 911 Coordinator
Tim Campbell, Commissioner, Chair, Richland County Commission
Sid Berg, Commissioner, Richland County Commission
Nathan Berseth, Commissioner, Richland County Commission
Rowland "Rollie" Ehlert, Commissioner, Richland County Commission
Perry Miller, Commissioner, Richland County Commission
Brett Lambrecht, Emergency Manager, Richland County Emergency Management
Jesse Sedler, County Engineer, Richland County Engineer
Amber Metz, Staff, Richland County Jobs Development Authority
Larry Leshovsky, Sheriff, Richland County Sheriff's Office
c/o Tiffany Bladow, Sec/Treas, Richland County Water Resource Board
Monica Zentgraf, Secretary-Treasurer, Richland County Water Resource District
Maple River Water Resource District
c/o Jesse Sedler, County Engineer, Richland County Highway Department

City Agencies

Jeff Olson, Mayor, City of Colfax, ND
Jen Skoog, City Auditor, City of Colfax, ND
Jason DuBord, Mayor, City of Kindred, ND
Tabitha Amaud, City Auditor, City of Kindred, ND
Andrew Draeger, Mayor, City of Mapleton, ND
Mary Hinschberger, City Auditor, City of Mapleton, ND
Jay Dietz, Chairman, Planning & Zoning, City of Mapleton, ND
Steve Dale, Mayor, City of Wahpeton, ND
Darcie Huwe, City Auditor, City of Wahpeton, ND
Fire Chief, Colfax Fire Department, ND
David Zibolski, Chief of Police Fargo Police Department, ND
Joel Paulsen, Executive Director, FM Area Diversion, ND
Rich Schock, Fire Chief, Kindred Community and Rural Fire Protection District, ND
Kayla Cross, Fire Chief, Mapleton Fire Department, ND
Jake Halstensfaard, Firefighter, Wahpeton Fire Department, ND
Scott Thorsteinson, Chief of Police, Wahpeton Police Department, ND
City of Wahpeton, ND

Libraries

Fargo Public Library, ND
Tim Dirks, Director
Kindred Public Library, ND
Joan P., Library Board President
Leach Public Library, ND
Melissa Bakken, Library Director

Newspapers

Daily News, ND
Tara Klostreich, Publisher
Carrie McDermott, Managing Editor
Prairie Public Broadcasting, ND
Dave Thompson, News Director
The Forum, ND
Matt Von Pinnon, Editor

Landowners, Individuals, and Organizations

Schmeichel S Violet, Attorney, Don Krassin, ND
Jones Lang Lasalle, BNSF Railroad, TX
Steve Dodd, Economic Development, BNSF Railway Company Crossing Permits, ND
c/o Mike Stahly, CENEX PIPELINE LLC, MT
Jennifer Greuel, Executive Director, Economic Development Association of North DakotaND
Levi Otis, Director of Government Affairs and Public Policy, Ellingson Companies, ND
Kevin Erwin, Associate General Counsel, Energy Transfer, LP, TX
Blair Lichtenwalter, Sr Director- Certificates, Energy Transfer, LP, TX
Dawn McGuire, Assistant General Counsel, Energy Transfer, LP TX
Sandi Piatz, Chair, Fargo Moorhead West Fargo Chamber of Commerce, MN
Arik Peterson, President and CEO, Greater North Dakota Chamber of Commerce, ND
Troy Gilbertson, I-29, ND
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Jim Huesman, School Board Director, Kindred School District, ND
Joean Halland, School Board Director, Kindred School District, ND
Mark Richard, School Board Director, Kindred School District, ND
Robert Maddock, School Board Director, Kindred School District, ND
Melanie Moffet, School Board Business Manager, Kindred School District, ND
Joshua Radcliffe, School Board President, Mapleton School District, ND
Jay Dietz, School Board Member, Mapleton School District, ND
Kara Hendrickson, School Board Member, Mapleton School District, ND
Aimee Mitchell, School Board Member Mapleton School District, ND
Collin Miller, School Board Member, Mapleton School District, ND
Kurt Wickstrom, President and CEO, Minn-Oak Farmers Cooperative, ND
Daryl Lies, President, North Dakota Farm Bureau, ND
Dana Kaldor, Vice President & District 2 Director, North Dakota Farm Bureau, ND
Val Wagner, District 3 Director North Dakota Farm Bureau, ND
Jeff Missling, Executive Vice President North Dakota Farm Bureau, ND
Mark Watne, President North Dakota Farmers Union, ND
Ronda Throener, District 7 Director, North Dakota Farmers Union, ND
Tom Bernhardt, President, North Dakota Grain Growers Association, ND
Blake Crosby, Executive Director, North Dakota League of Cities, ND
Troy Coons, Chairman Northwest Landowners Association, ND
Dan Zink, Vice President of Economic Development & Community Affairs, Red River Valley & Western Railroad Company, Crossing Permits, ND
Steve Robb, Transportation Operations Assistant Manager, Red River Valley & Western Railroad Company,

Crossing Permits, MN
Damon DeVillers, School Board President, Richland School District 37, ND
Art Nelson, School Board Vice President, Richland School District 37, ND
Michelle Nelson, School Board DirectorRichland School District 37, ND
Ginny Buck, School Board Director, Richland School District 37, ND
Mike Hauschild, School Board Director, Richland School District 37, ND
Jake Kubela, School Board Director, Richland School District 37, ND
Brad Bakken, School Board Director, Richland School District 37, ND
Schoot Thiel, School Board Director, Richland School District 37, ND
Kathy Dimmer, School Board Director, Richland School District 37, ND
Nathan Berseth, School Board President, Richland School District 44, ND
Scott Hendrickson, School Board Member, Richland School District 44, ND
Nicole Holdman, School Board Member, Richland School District 44, ND
Todd Johnson, School Board Member, Richland School District 44, ND
Jody Lingen, School Board Member, Richland School District 44, ND
Amy Lehmann, School Board Member, Richland School District 44, ND
Craig Olson, School Board Vice President, Richland School District 44, ND
Rydell Sarah Ann Trust, Ron Rydell, MN
Baker Carol Et. al., S1/2 Sw1/4 26 135 49 Kyle Gylland & Carol Mason Baker, MN
Carlson Oryce J, Susan Hilzendager Et al. ND
Larry J Dennis, James Mira, US Bank, ND
Carlee Mcleod, President, Utility Shareholders Of North Dakota, ND
Attn: Kelly Steffe, William B Richardson Trust Charles P. Peterso Thoreson Steffes Trust Co, ND
Bruce Pershke, Charlene Pershke, TN
Jolene M Miller, ND
Cynthia Krause, FL
Theane L Miller, ND
Brady T & Amie Miller, ND
Kelly T Miller Ltd Family Ptr, ND
Brady-Kayle Farm LLP, ND
Carol & William Heuer, GA
Kelly T Miller, ND
Leland Johnson, WA
E.C. Ltd Larson, Janice Nereson, ND
Kelly T Miller, ND
Linda A Olson, ND
Stephen W Gunness, ND
Linda Umlauf, MN
Bruce Ltd Yaggie, MN
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Brice K Bellmore, MN
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Connie Kinneberg, ND
Duane D Strand, ND

Vance G Gylland, ND
Carter W Gylland, ND
Bradley P Hage, ND
Sheldon Hage, ND
Colette Mumm, MN
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Robert L Rostad, ND
Dwain Peterson, ND
Raydon L Workin, ND
Gregg L Johnson, ND
L Jerome Casperson, ND
Jeremiah & Nelson, ND
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Jeffrey & Deborah Hackey, ND
Lynn A Moe, ND
Terry L Jessen, NE
Doug and Alanna Christensen, MN
Steven W Koenig, ND
Ronald Rydell, MN
Elizabeth J Corcoran, MN
Elaine & Harlan Boyer, ND
Rebecca J Moe, ND
L & J Moe LLLP, ND
Dennis G Holmen, ND
Gary A Selstedt, ND
Gregory and Elizabeth Oestreich, ND
Keith B Anderson, ND
Kirk Ronning, ND
Todd Toppen PA for Viola Toppen, ND
Christopher Johnson, ND
Susan Boreen, ND
Horne Family Ltd Trust, Richard Horne, Trustee, AZ
Laverne R Sullivan, ND
Steven D Erickson, FL
Douglas & Darlene Christianson, ND
John P Hertsgaard Family Lllp, ND
Gordon and Cheryl Fjelstad, ND
Orten B Brodshaug Revocable Living Trust, Stephanie Strand, ND
Darrel & Claudia Fjelstad, MN
Kelly Perhus, ND
Debra Perhus, ND
Matthew Robert Ottis, ND
SE Cass Water Resource District, ND
Mark & Joan Ottis, ND
Charles Edwin & Janice P Evingson Rlt, MN
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John & Carol Fjelstad, ND
Darrin & Lori Schreiner, MN
Derek J Swenson, ND
Orlan R Swenson, ND
Elvira and Lowell Greuel, ND
Holly Jean Corner, Wa
Joan Schulz, MN

K-F Farm Partnership, ND
Kent & Janice Lahren, ND
Jean M Washa, MN
Michelle Lahren, ND
Joy & Shawn Petermann, Gene Peterman, MN
Frank & Patricia Joyce Living Trust, Co
Clarence W & Shirley J Jermstad Living Trust, ND
Hahn Land Trust, ND
Western Trust Company, Western, SD
Nancy Ames, ND
Paul & Denise Schulz, ND
Kathleen Nesemeier Le, ND
Elizabeth Pritchard Le, ND
David Erdmann, ND
Mark R & Karen D Erdmann, ND
Todd & Deeanne Ellig, ND
Paul Schulz, ND
Leo B Murphy, Dave Camrud, MN
John W& Margaret T Rutten, ND
Stanley H & Feye E Bartholomay, ND
Denae Lynn Setter and Paul Mathis, ND
David Paul Houkom, ND
Marian P Stine Revocable Trust, FL
Hagensen Gerald, ND
James & Anne Hagensen, ND
Lori A Wanzek Revocable Trust, ND
Charles H & Bonnie J Thompson H.T., ND
Cenex Pipeline LLC, Mike Stahly, MT
Marilyn G Libbrecht, ND
Bruce P Brand, ND
Gust Olive Family LLC, Jake Gust Trustee, ND
Dolores Meyer, ND
Meyer Ag Holdings LLP, Jay Meyer, ND
Thomas McKinnon Family Trust, ND
Bishop Joel, ND
Bishop Robert, ID
WBI Energy Transmission Inc, ND
Diane M Olson, ND
Charles W Hewitt Jr, ND
Darline H Leland, Rebecca Leland, WI
Thomas R Radig, MN
Steve Fixen, ND
Linda A & Bruce Olson, ND
Mark A Johnson, Trustee, MN
Michael J & Lori A Vogeler, ND
John W & Nicole Sherven, MN
Sean M Sullivan, Laverne R Sullivan, ND
Lee Farms LLC, Michael C Lee, ND
Jeffrey S & Kathleen M Bolme, ND
Lou Haakenson Merry, MN
Kindred-Davenport Regional Airport, Ott, ND
Craig Hertsgaard Family LLLP, ND
Hilding & Dorothy Ronning, Ca

Dallas Christiansen, ND
Stuart T & Laverna Ysterbo LLLP, ND
Rayder E Rude, ND
Dennis W & Carol A Braaten, ND
Karl A Schneider, ND
Lorin D & Mavoureen M Styf, ND
Douglas Mooneyhan, TN
Lavinia Disanto, DE
Barbara A Gaddie Tod, MN
Girodat Daniel M & Leeanne M, ND
Farms David and Farms Theresa Braaten, ND
Derek Swenson, ND
Lauman Edward Et. al., ND
Lauman Farms PTSHP, ND
Linda Patterson, ND
Trusts David C & Carolyn J Moeller Revocable Living Trusts, MN
Patterson James B, MN
Herman Sarah Andrews, ND
John P Hertsgaard Family LLLP Et. al. and Craig L Hertsgaard Family LLLP, ND
Greuel Elvira and Lowell Greuel W/H, AZ
Lee C Otos Le, ND
Craig S Olson Grantor Trust Et. al., ND
Kinneberg Connie, ND
Ellingson Drainage, MN
Bishop Alex, MN
Olson Diane M, ND
Krueger Living Trust, NE
Adam and Miranda Rutten, ND
Jessen Terry, NE
Kost Materials, ND
"Orten B. Brodshaug Rev Living Trust and Sandra Brodshaug Rev Living Trust "
Red River Valley and Western Railroad Co., ND
Mark Harless, MN
Styf Colin A Et. al., NE
Smith Bryan J, ND
Schmeichel S Violet Et. al., ND

APPENDIX B

COMMENTS RECEIVED

APPENDIX B

Comments Received

Commentor	Accession Number	Date Filed	File Link
Comments Received During Pre-Filing Notice of Scoping Period, January 4 - February 3, 2022 (PF21-4)			
North Dakota Parks and Recreation Department	20220121-5179	1/21/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220121-5179
North Dakota Game and Fish Department	20220201-5019	2/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220201-5019
U.S. Fish and Wildlife Service (USFWS)	20220202-5003	2/2/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220202-5003
U.S. Environmental Protection Agency (EPA)	20220203-5075	2/3/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220203-5075
Dan Brunkhorst (U.S. Bureau of Land Management)	20220204-5000	2/4/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220204-5000
Chad Orn (North Dakota Department of Transportation)	20220215-0006	2/15/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220215-0006
Loren Wickstrom (U.S. Bureau of Land Management)	20220215-0008	2/15/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220215-0008
L. David Glatt (North Dakota Department of Environmental Quality)	20220215-0010	2/15/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220215-0010
Comments Received Following the Notice of Application, June 10, 2022 (CP22-466)			
Steve Dale, City of Wahpeton (filed by Darcie Huwe)	20220617-5090	6/17/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220617-5090
Northern States Power Company	20220621-5112	6/21/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220621-5112
Comments Received During the Notice of Intent (NOI) Scoping Period, June 22 - July 22, 2022 (CP22-466)			
Energy Transfer LP	20220624-5145	6/24/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220624-5145
BLM Eastern MT/DK District	20220627-5100	6/27/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220627-5100
NATURAL GAS SUPPLY ASSOCIATION	20220628-5039	6/28/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220628-5039
Center for LNG	20220628-5040	6/28/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220628-5040
Golden Growers Cooperative (Scott Stofferahn)	20220628-5123	6/28/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220628-5123
Viking Gas Transmission Company	20220629-5061	6/29/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220629-5061
Janel Fredericksen (Jolene Miller)	20220630-5065	6/30/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220630-5065
Representative Alisa Mitskog	20220630-5262	6/30/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220630-5262

APPENDIX B

Comments Received

Commentor	Accession Number	Date Filed	File Link
Industrial Commission of North Dakota	20220630-5288	6/30/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220630-5288
Congress of the United States- Senator John Hoeven, Senator Kevin Cramer, and Representative Kelly Armstrong	20220701-4000	7/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220701-4000
City of Kindred, ND (Tabitha Arnaud)	20220701-5004	7/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220701-5004
Mark Ottis	20220701-5007	7/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220701-5007
Red Valley Sugarbeet Growers Association	20220701-5231	7/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220701-5231
Cargill	20220701-5403	7/1/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220701-5403
Cargill	20220705-5022	7/5/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220705-5022
Mark Harless	20220705-5168	7/5/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220705-5168
Minn-Dak Farmers Cooperative	20220706-0006	7/6/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220706-0006
North Dakota Grain Growers Association	20220707-0006	7/7/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220707-0006
North Dakota Legislative Assembly	20220707-0007	7/7/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220707-0002
Ellingson	20220711-4000	7/11/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220711-4000
North Dakota Legislative Assembly	20220712-0010	7/12/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220712-0010
North Dakota Parks and Recreation	20220715-5038	7/15/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220715-5038
U.S. Environmental Protection Agency (EPA)	20220722-5086	7/22/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220722-5086
Other Comments Received Following the Close of the NOI Scoping Period (CP22-466)			
North Dakota Department of Transportation	20220802-0014	8/2/2022	https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220802-0014

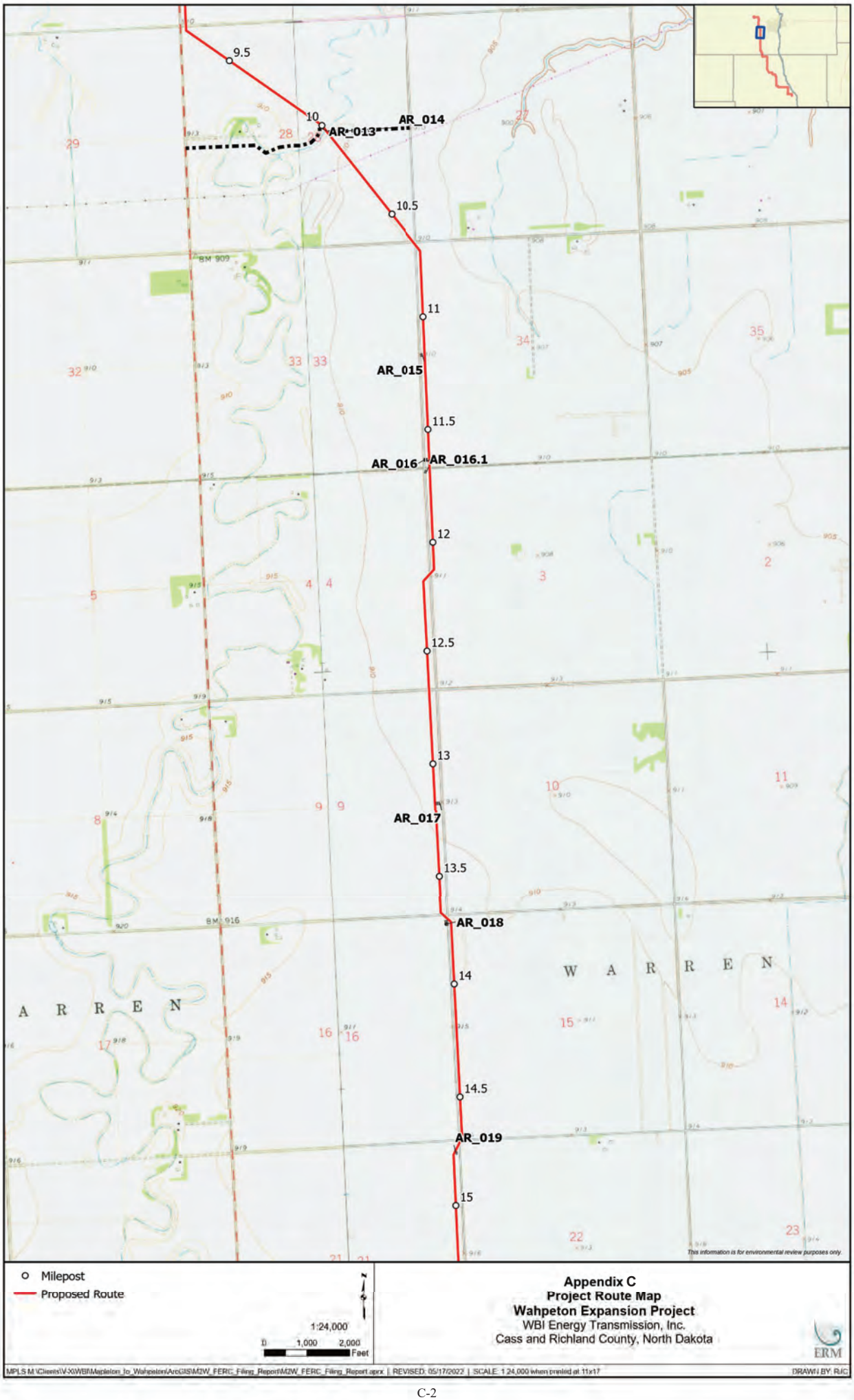
APPENDIX C

PROJECT TOPOGRAPHIC MAPS

Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

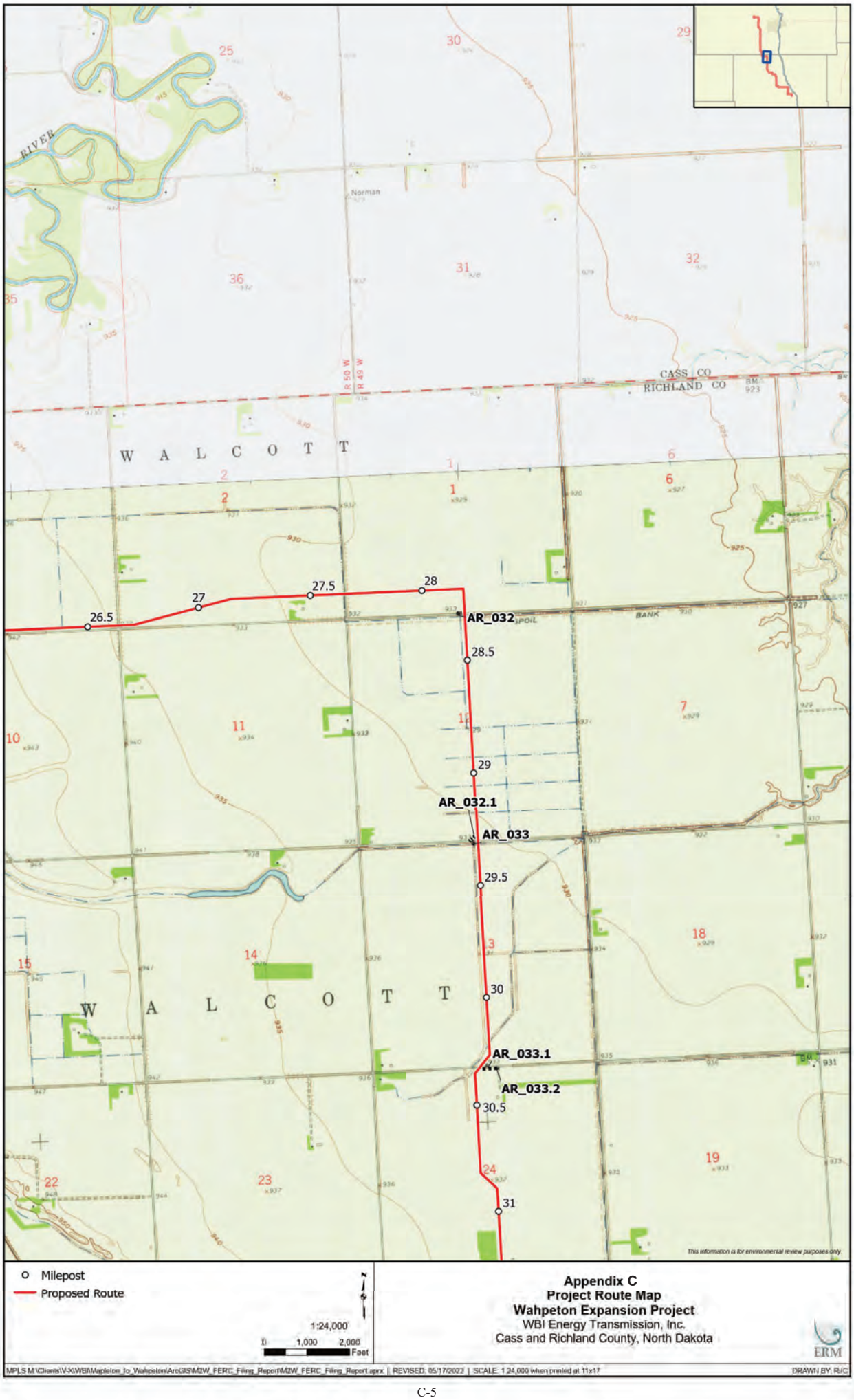
ERM

MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: RJC


9.5
10
AR_013
AR_014
10.5
11
AR_015
11.5
AR_016
AR_016.1
12
12.5
13
AR_017
13.5
AR_018
14
14.5
AR_019
15
BM 909
BM 916
W A R R E N
A R R E N
This information is for environmental review purposes only.
Milepost
Proposed Route
1:24,000
0 1,000 2,000
Feet
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
DRAWN BY: RJC


15.5
AR_019.1
16
AR_020
16.5
17
AR_022
17.5
18
AR_023
18.5
AR_023.1
19
AR_024
19.5
AR_024.1
20.5
AR_024.2
School No 5
School No 19
Warren
NORTHERN
PACIFIC
SHEYEN
N O R M A N N A
This information is for environmental review purposes only.
Milepost
Proposed Route
1:24,000
0 1,000 2,000
Feet
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
DRAWN BY: RJC


NORMANNA
WALCOTT
Kindred
Hamry Landing Field
Sewage Disposal
Park
Tower
CASS CO
RICHLAND CO
CASS CO
RICHLAND CO
Dokken Cem
Gol Cem
Gol Ch
BM 942
BM948
BM 953
BR 942
BR 949
GREAT NORTHERN
SHEYENNE RIVER
SHEYENNE RIVER
GREAT
21
21.5
22
AR_042.3
AR_025
22.5
23
MDU -
Kindred
Border Station
AR_026
23.5
24
AR_027
AR_028
AR_028.1
24.5
AR_029
25
25.5
AR_030
26
AR_Kindred1
Kindred Yard
This information is for environmental review purposes only.
Milepost
Proposed Route
Proposed Facility
1:24,000
0 1,000 2,000
Feet
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
DRAWN BY: RJC


RIVER
Norman
CASS CO
RICHLAND CO
W A L C O T T
R 50 W
R 49 W
26.5
27
27.5
28
AR_032
28.5
29
AR_032.1
AR_033
29.5
30
AR_033.1
AR_033.2
30.5
31
This information is for environmental review purposes only.
Milepost
Proposed Route
1:24,000
0 1,000 2,000
Feet
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
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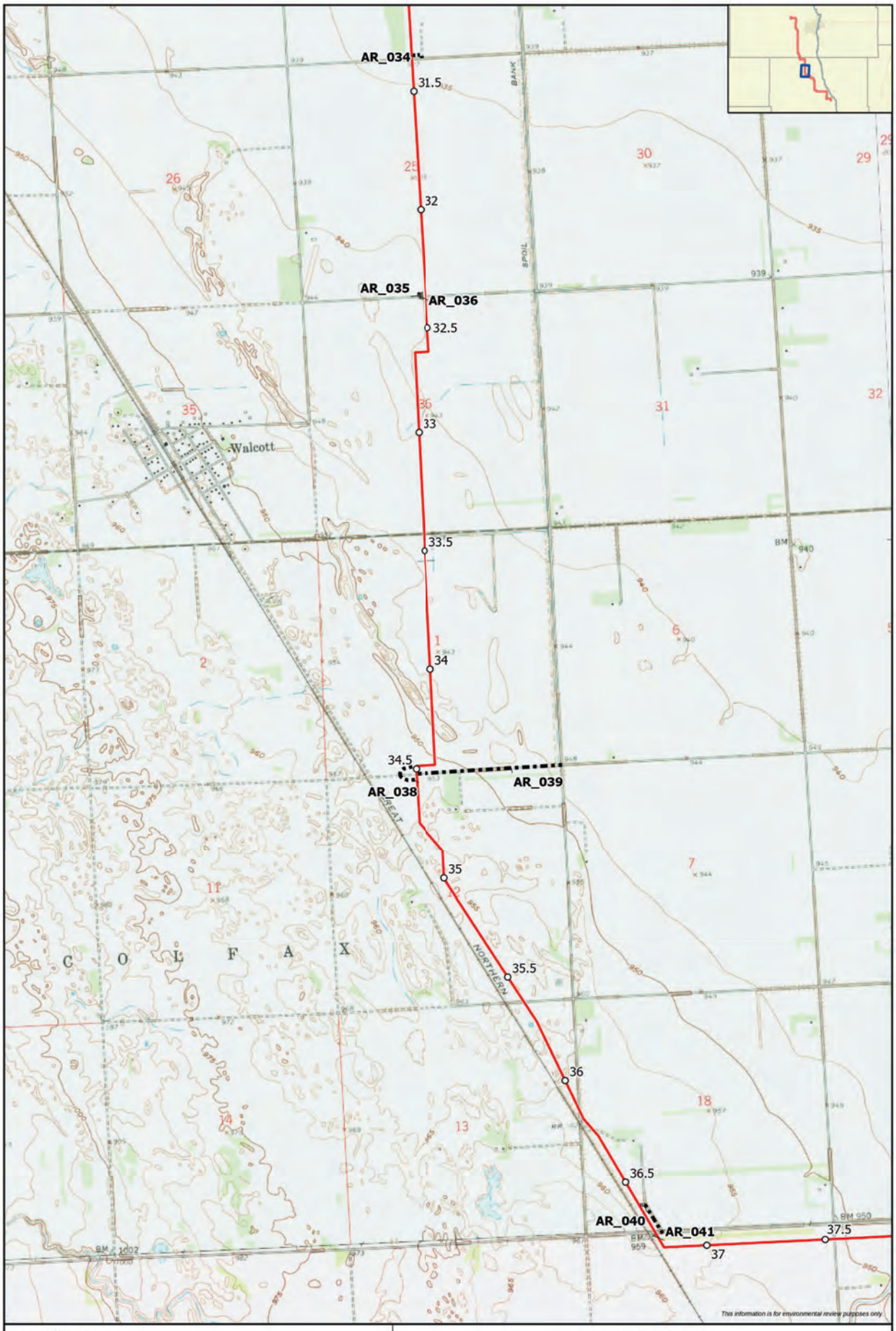
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AR_035
AR_036
32.5
33
33.5
34
34.5
AR_038
AR_039
35
35.5
36
36.5
AR_040
AR_041
37
37.5
Walcott
COLFAX
NORTHERN
BANK
SPOIL
BEAT
Milepost
Proposed Route
1:24,000
0 1,000 2,000 Feet
This information is for environmental review purposes only
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
DRAWN BY: RJC

Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

ERM

MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: RJC


44
AR_046.1
44.5
AR_047
45
AR_048
45.5
46
AR_049
46.5
AR_050
47
AR_051
47.5
AR_052
48
AR_053
48.5
AR_054
AR_055
49
49.5
Pitcairn
Flowing Well
Bethany Ch
Galchutt
GREAT NORTHERN
A B E R C R O M B I E
Milepost
Proposed Route
1:24,000
0 1,000 2,000 Feet
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
This information is for environmental review purposes only.
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
DRAWN BY: RJC


AR_056
AR_057
AR_058
50
50.5
51
51.5
52
52.5
53
53.5
Milepost
Proposed Route
1:24,000
0 1,000 2,000
Feet
This information is for environmental review purposes only.
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\W-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17
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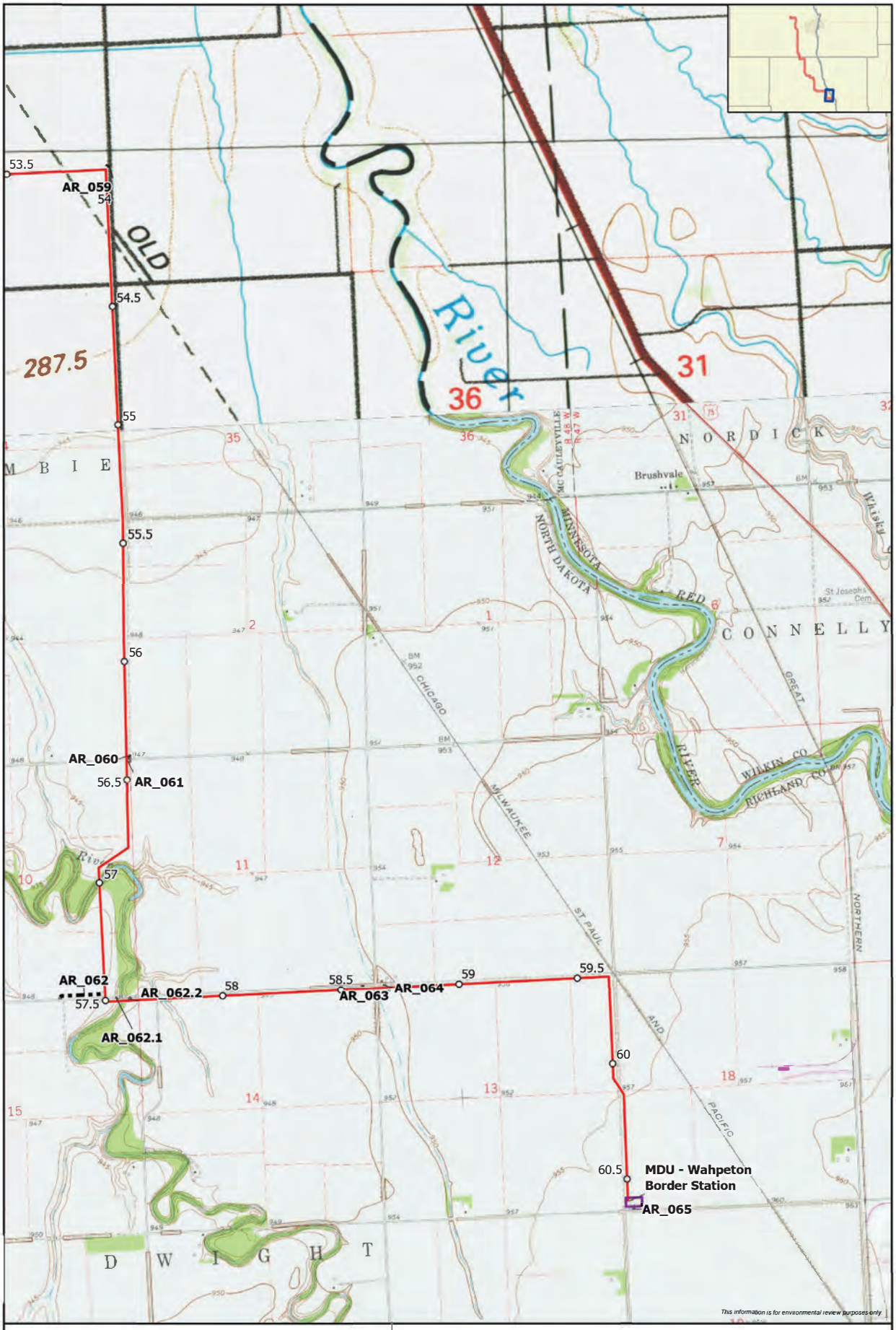
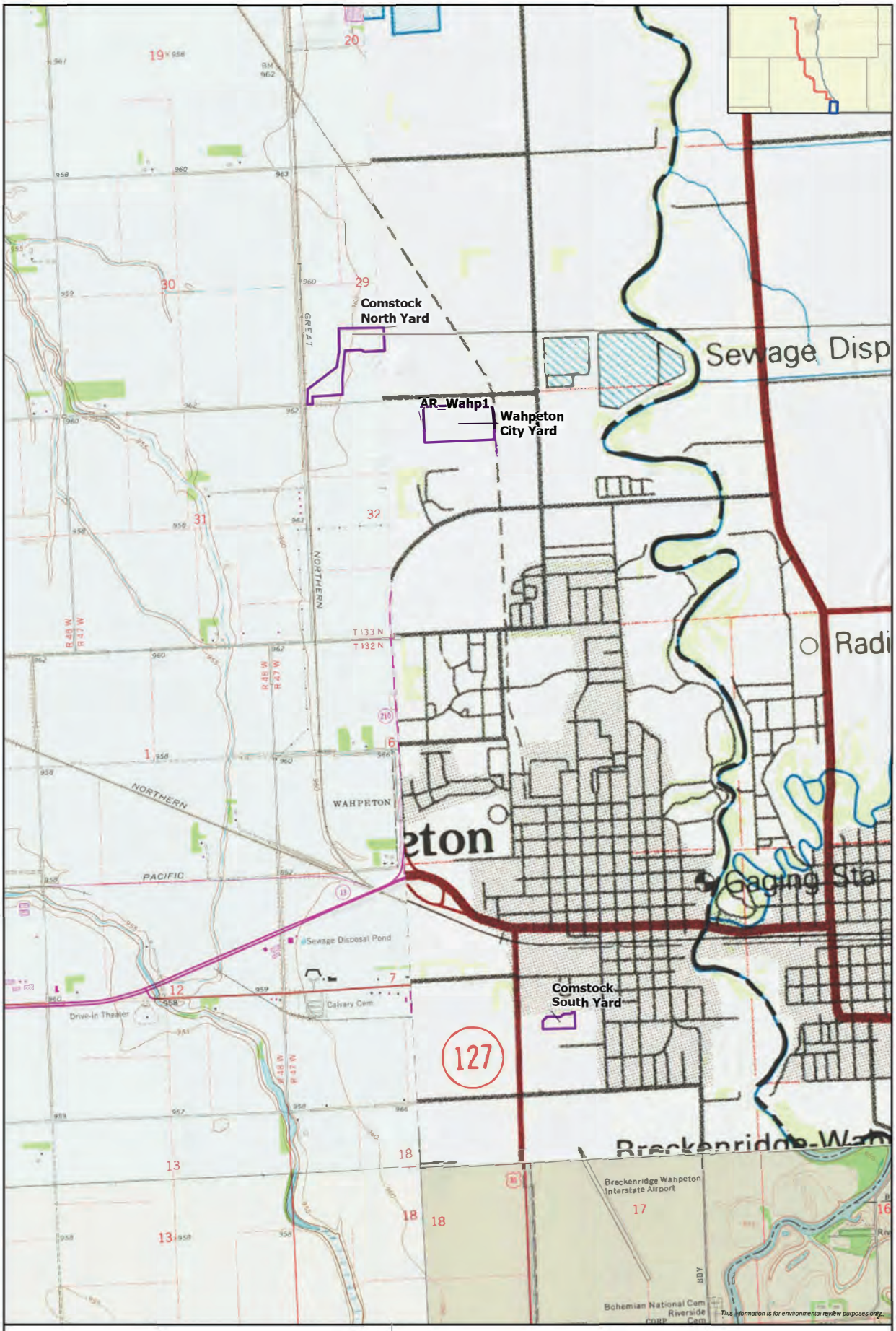


Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

ERM

MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: RJC



Proposed Facility

1:24,000

0 1,000 2,000 Feet

Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

ERM

MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: RJC

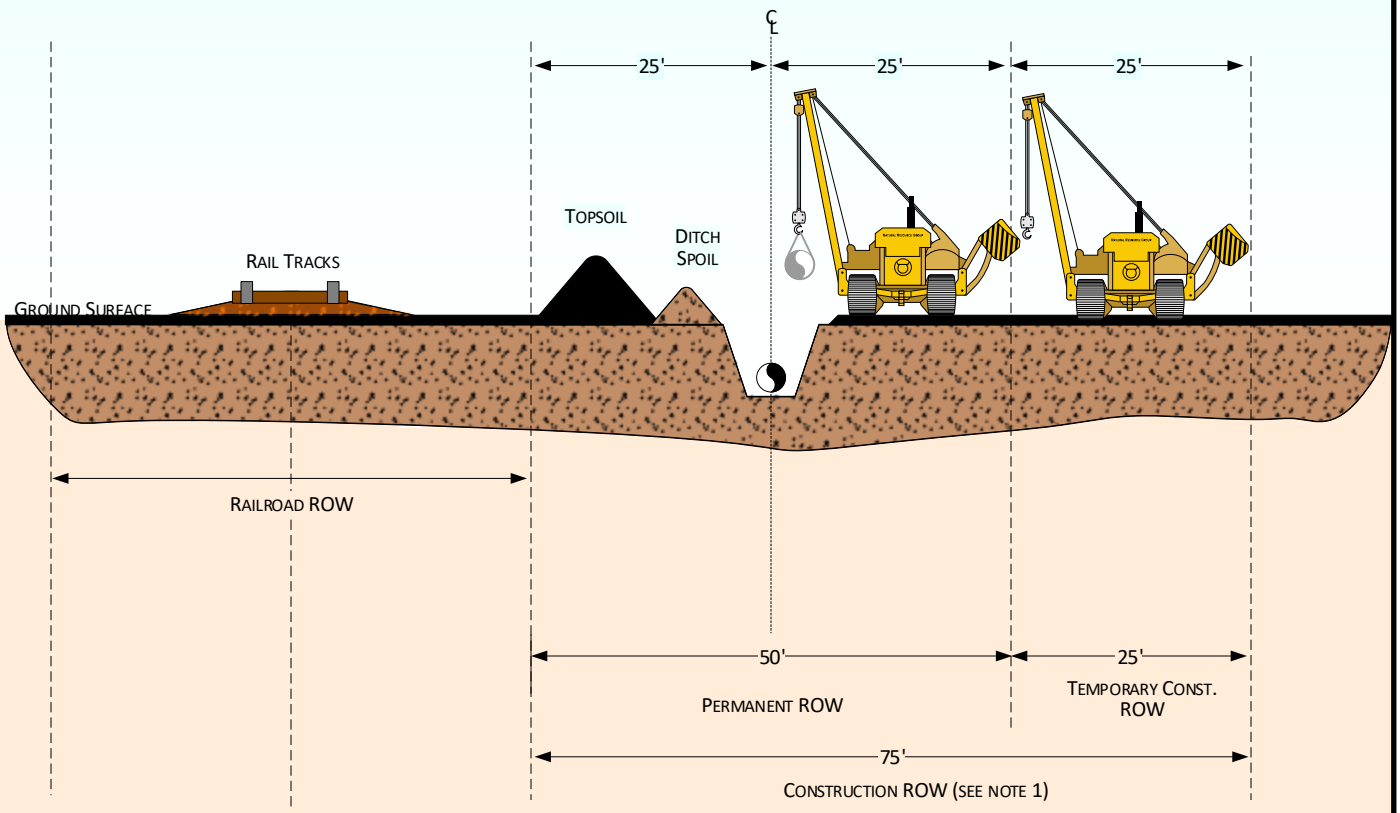
Appendix C
Project Route Map
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota

ERM

MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/17/2022 | SCALE: 1:24,000 when printed at 11x17 DRAWN BY: RJC

APPENDIX D

TYPICAL DRAWINGS



PROFILE

NOTES:

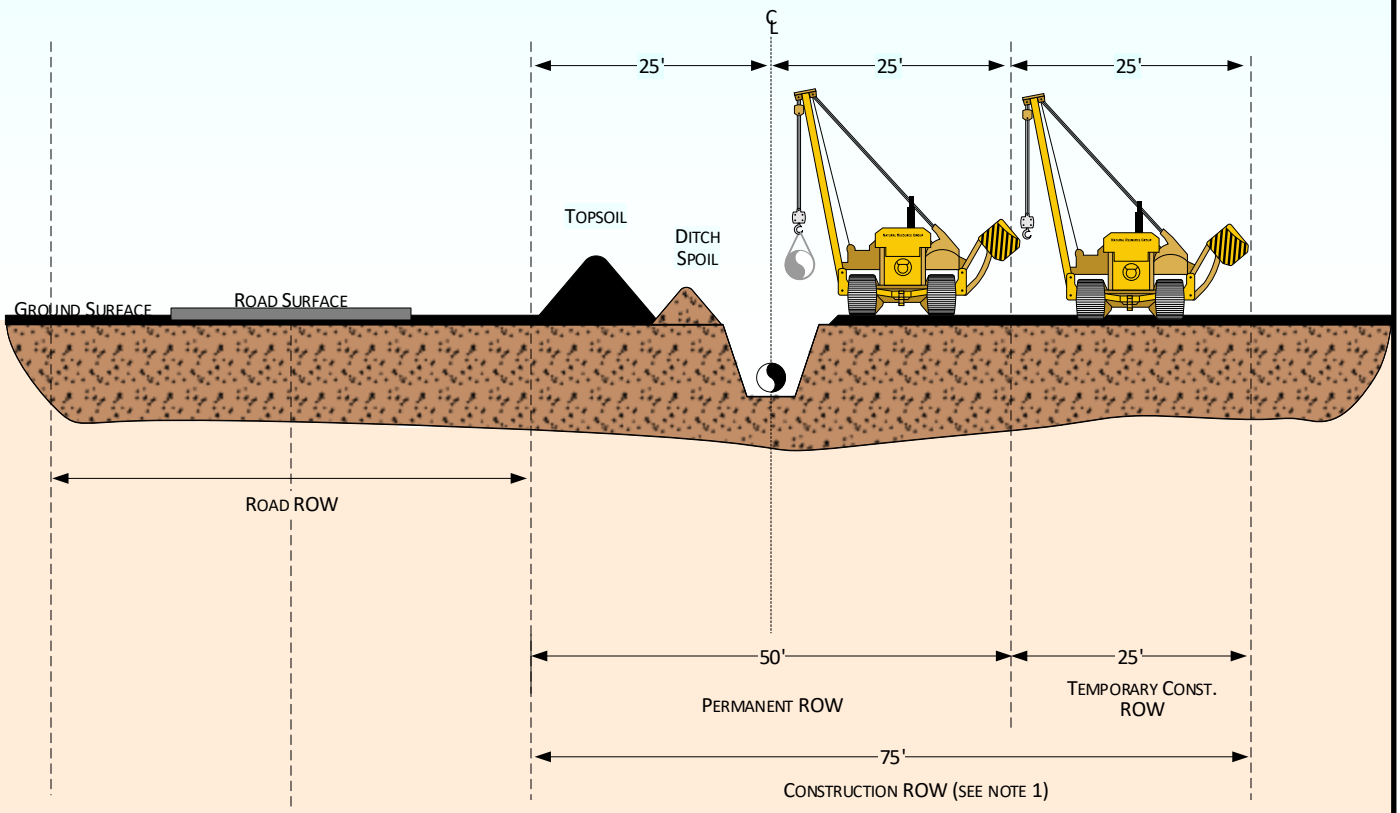
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50' WIDE AND WILL NOT OVERLAP THE EXISTING RAILROAD PERMANENT EASEMENT. ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED, AND OTHER SPECIAL CIRCUMSTANCES AS REQUIRED.
2. THIS DRAWING REFLECTS "TRENCH AND SPOIL SIDE" TOPSOIL STRIPPING PROCEDURE.
3. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE INSPECTOR.

For environmental review purposes only.

Construction Right-of-Way Adjacent to Railroad
Wahpeton Expansion Project
WBI Energy Transmission, Inc.

ERM

MPLS: \M2W\Typicals	ROW_Adjacent_Railroad_Profile.vsd	Scale: NTS	Revised: 2/15/2022	Drawn By: RJC



PROFILE

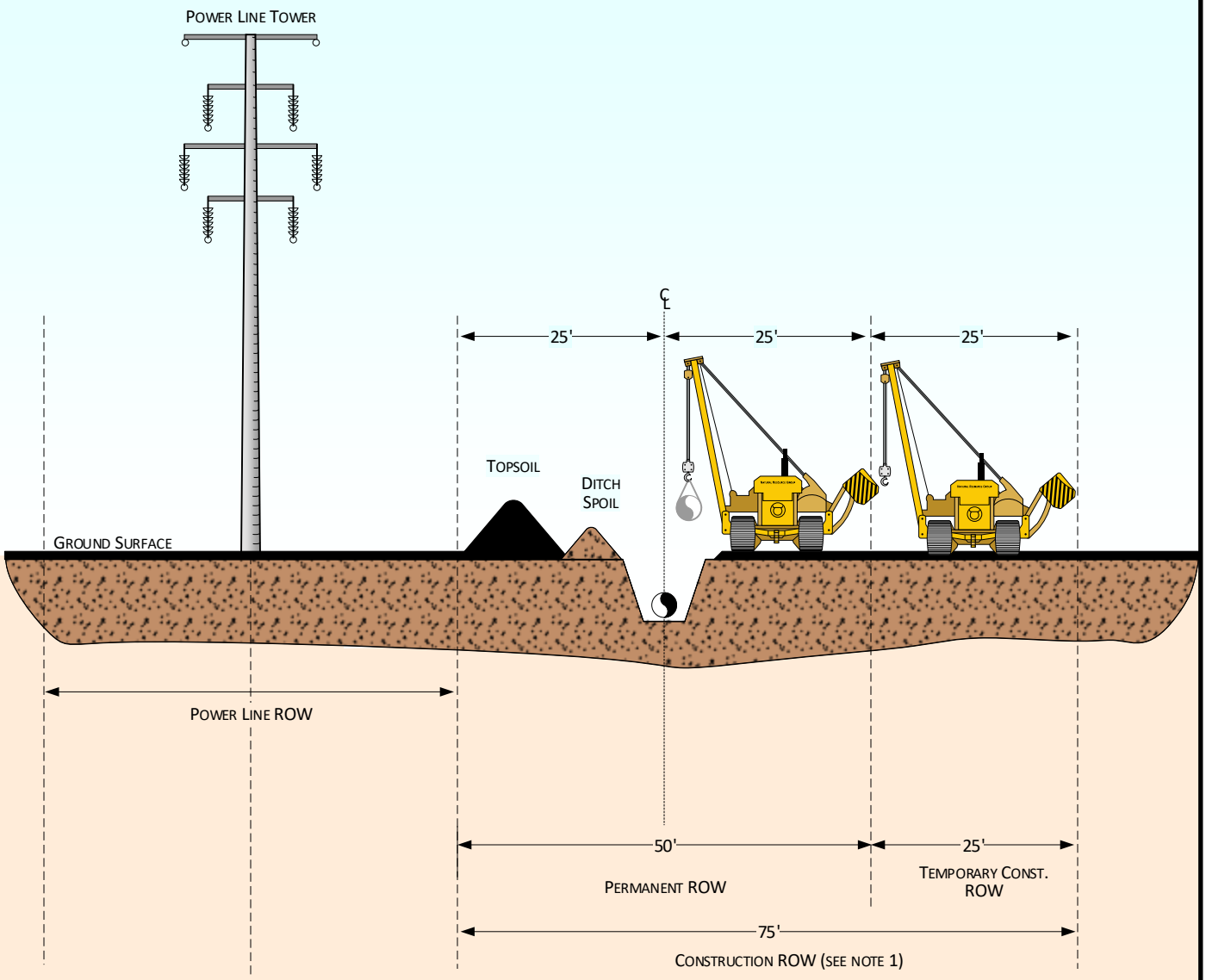
NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50' WIDE AND WILL NOT OVERLAP THE EXISTING ROAD PERMANENT EASEMENT. ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED, AND OTHER SPECIAL CIRCUMSTANCES AS REQUIRED.
2. THIS DRAWING REFLECTS "TRENCH AND SPOIL SIDE" TOPSOIL STRIPPING PROCEDURE.
3. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE INSPECTOR.

For environmental review purposes only.

Construction Right-of-Way Adjacent to Road
Wahpeton Expansion Project
WBI Energy Transmission, Inc.

MPLS: \M2W\Typicals	ROW_Adjacent_Road_Profile.vsd	Scale: NTS	Revised: 10/15/2021	Drawn By: RJC



PROFILE

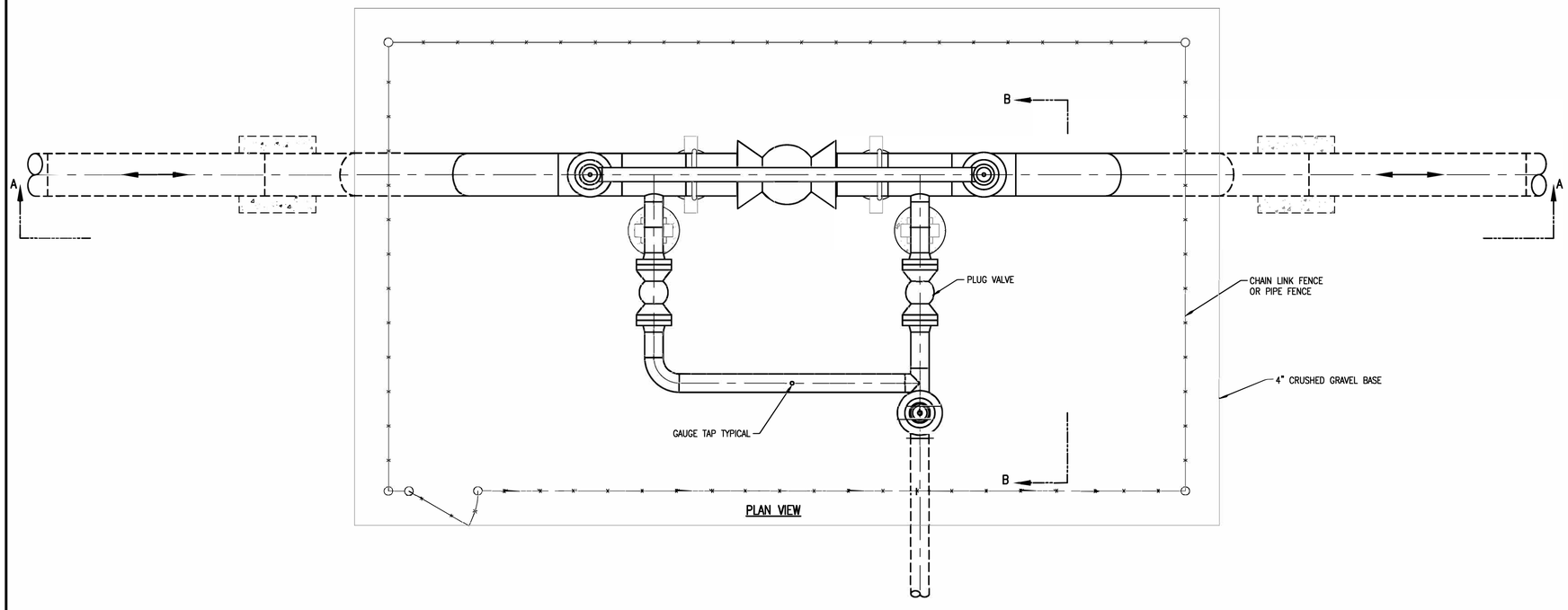
NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75' WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50' WIDE AND WILL NOT OVERLAP EXISTING POWER LINE PERMANENT EASEMENT. ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED, AND OTHER SPECIAL CIRCUMSTANCES AS REQUIRED.
2. THIS DRAWING REFLECTS "TRENCH AND SPOIL SIDE" TOPSOIL STRIPPING PROCEDURE.
3. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE INSPECTOR.

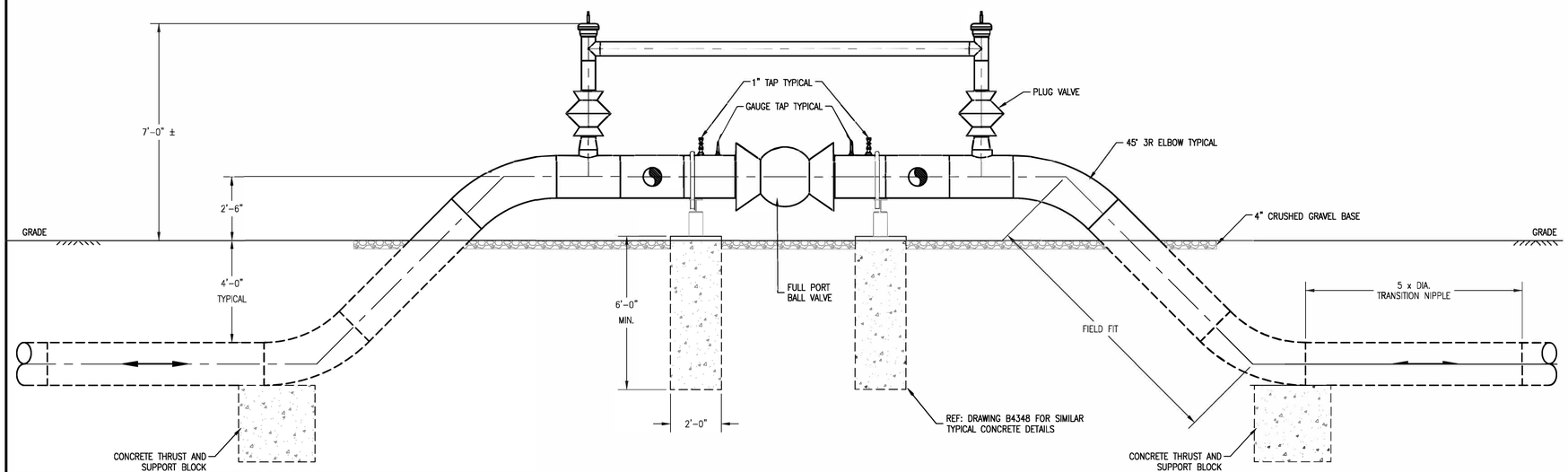
For environmental review purposes only.

Construction Right-of-Way Adjacent to Power Line
Wahpeton Expansion Project
WBI Energy Transmission, Inc.

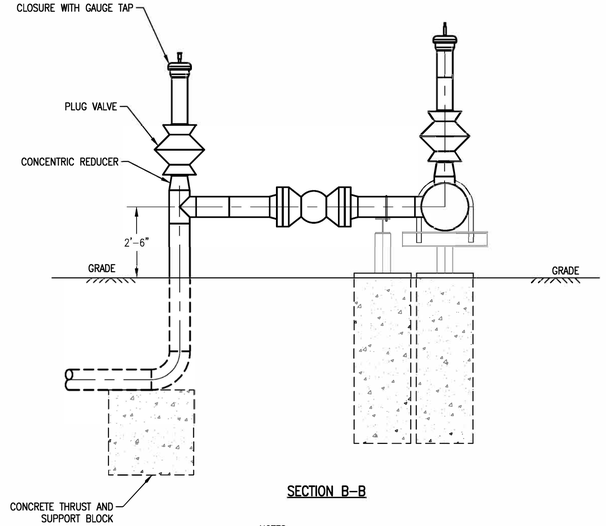
MPLS: \M2W\Typicals	ROW_Adjacent_Powerline_Profile.vsd	Scale: NTS	Revised: 10/15/2021	Drawn By: GIS



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:
- SUPPORTS MUST BE INSTALLED IN UNDISTURBED SOIL.
- TYPICAL 1" TAPS INCLUDE: 1" THREADOLET, 1" NIPPLE, 1" PLUG VALVE AND 1" HEX PLUG.
- TYPICAL GAUGE TAPS INCLUDE: 1/2" THREADOLET, H1C-24 AGCO VALVE AND 1/4" F.S. PLUG.

NO.	DATE	DRWN BY	DSGN BY	CHKD BY	DESCRIPTION
3	12/31/20	KM	P.R.	STAFF	UPDATED TYPICAL STANCHION REFERENCE DRAWING
2	11/7/16	KM	P.R.	STAFF	ADDED STACK TO TAKE-OFF, FENCE, GRAVEL & NOTES

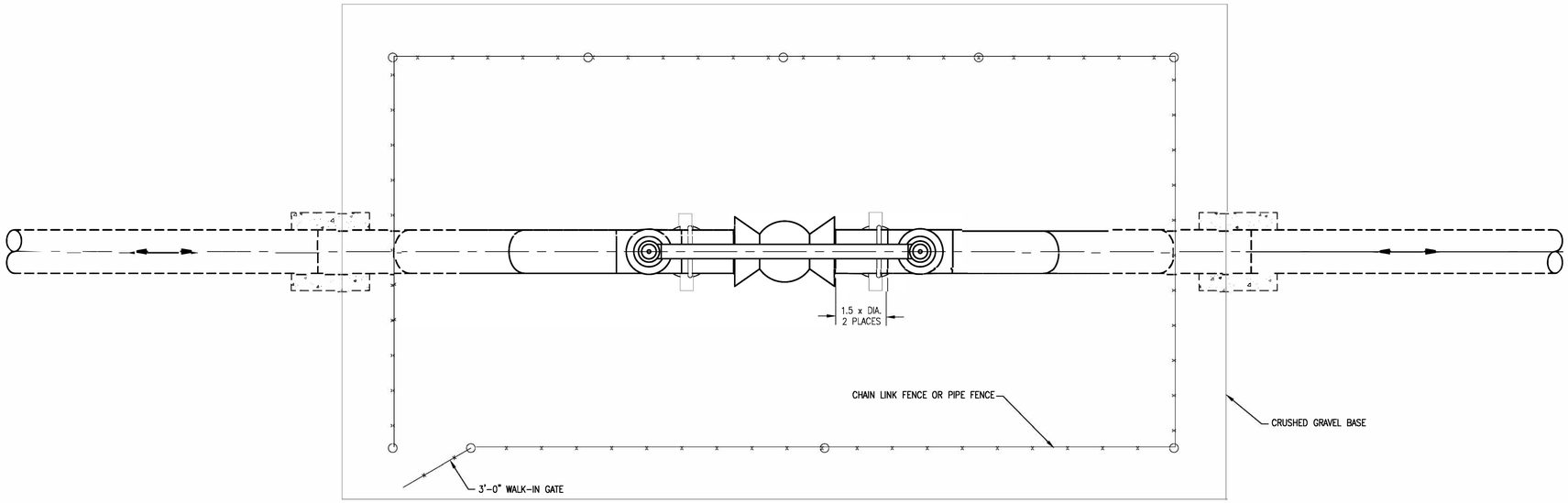
APPROVED AS FINAL
BY: K.MOTHERSHEAD
DATE: 12/31/20

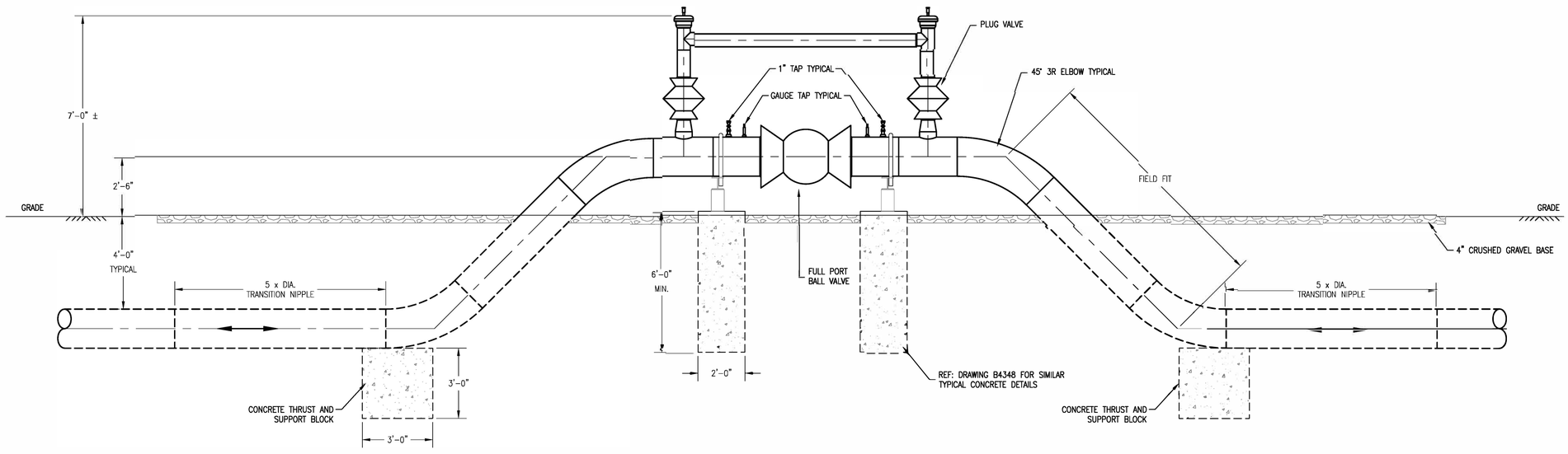
WBI ENERGY TRANSMISSION
An MDU Resources Group Company

TYPICAL BLOCK VALVE SETTING WITH SIAMESE

W.O. #	STD.5111
DESIGNED BY	P.RYAN
DRAWN BY	KM
CHECKED BY	STAFF
DATE CREATED	3/18/15

SCALE	FILE NAME	DWG. NO.	SHEET NO.
3/8"-1'-0"	C1660	C-06-1660	1 OF 1





NOTES:
- SUPPORTS MUST BE INSTALLED IN UNDISTURBED SOIL.
- TYPICAL 1" TAPS INCLUDE: 1" THREADOLET, 1" NIPPLE, 1" PLUG VALVE AND 1" HEX PLUG.
- TYPICAL GAUGE TAPS INCLUDE: 1/2" THREADOLET, H1C-24 AGCO VALVE AND 1/4" F.S. PLUG.

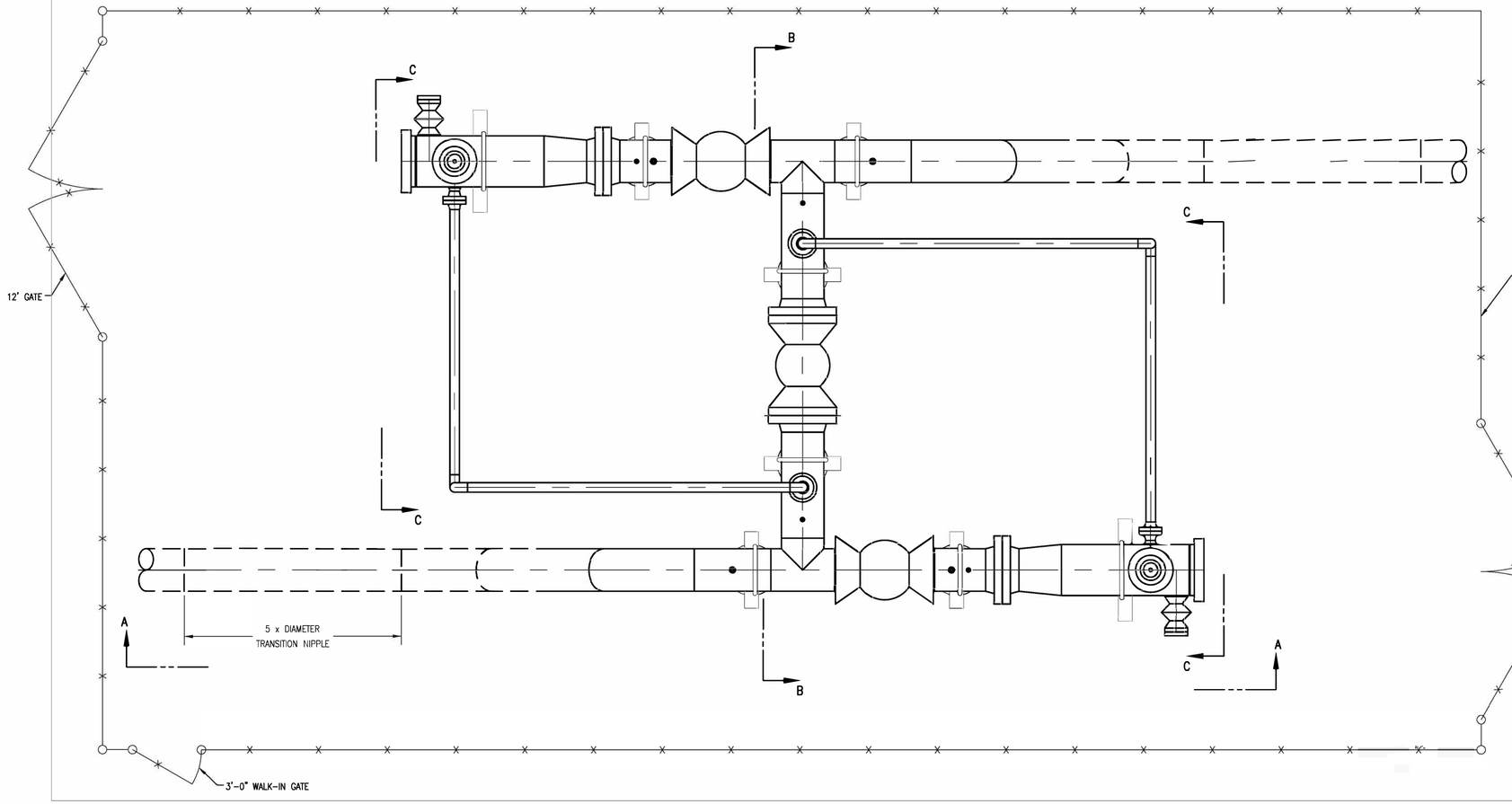
NO.	DATE	DRWN BY	DSGN BY	CHKD BY	DESCRIPTION
3	12/31/20	KM	P.R.	STAFF	UPDATED TYPICAL STANCHION REFERENCE DRAWING
2	11/7/16	KM	P.R.	STAFF	ADDED NOTES AND 1" TAP CALLOUT

APPROVED AS FINAL
BY: K.MOTHERSHEAD
DATE: 12/31/20

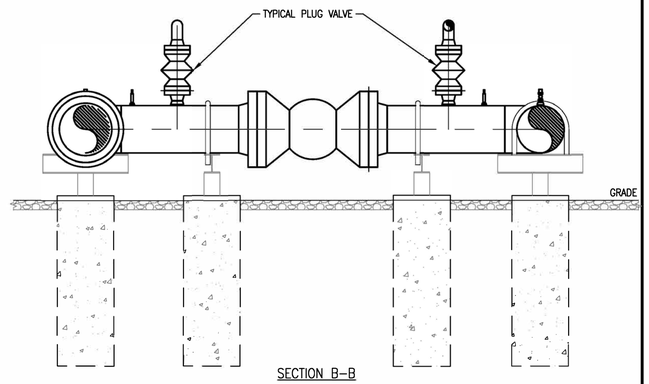
WBI ENERGY TRANSMISSION
An MDU Resources Group Company

TYPICAL BLOCK VALVE

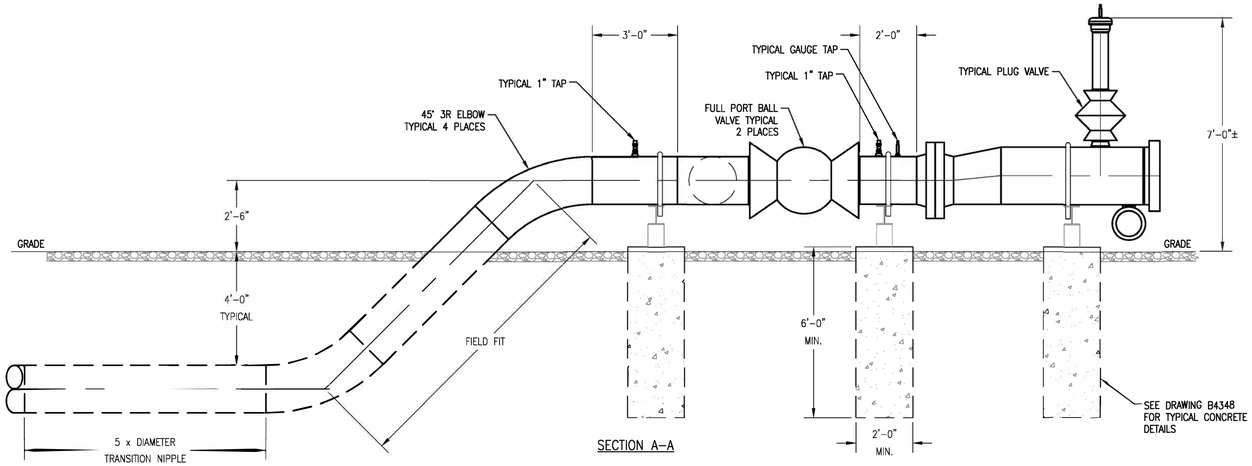
W.O. # STD.5111					
DESIGNED BY	P.RYAN				
DRAWN BY	KM				
CHECKED BY	STAFF	SCALE	FILE NAME	DWG. NO.	SHEET NO.
DATE CREATED	3/13/15	3/8"=1'-0"	C1659	C-06-1659	1 OF 1



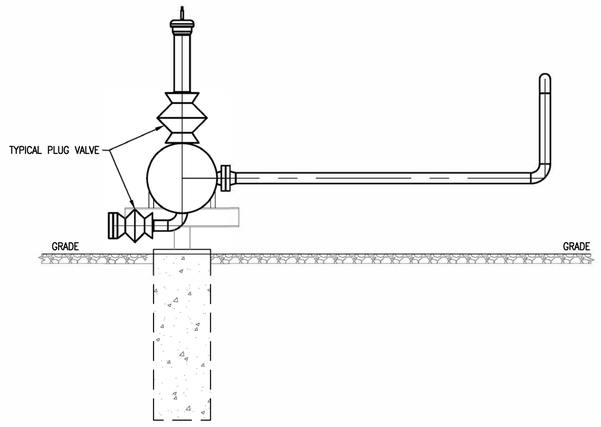
PLAN VIEW



SECTION B–B



SECTION A–A



SECTION C–C

NOTES:
- SUPPORTS MUST BE INSTALLED IN UNDISTURBED SOIL.
- TYPICAL 1" TAPS INCLUDE: 1" THREADOLET, 1" NIPPLE, 1" PLUG VALVE AND 1" HEX PLUG.
- TYPICAL GAUGE TAPS INCLUDE: 1/2" THREADOLET, H1C-24 AGCO VALVE AND 1/4" F.S. PLUG.

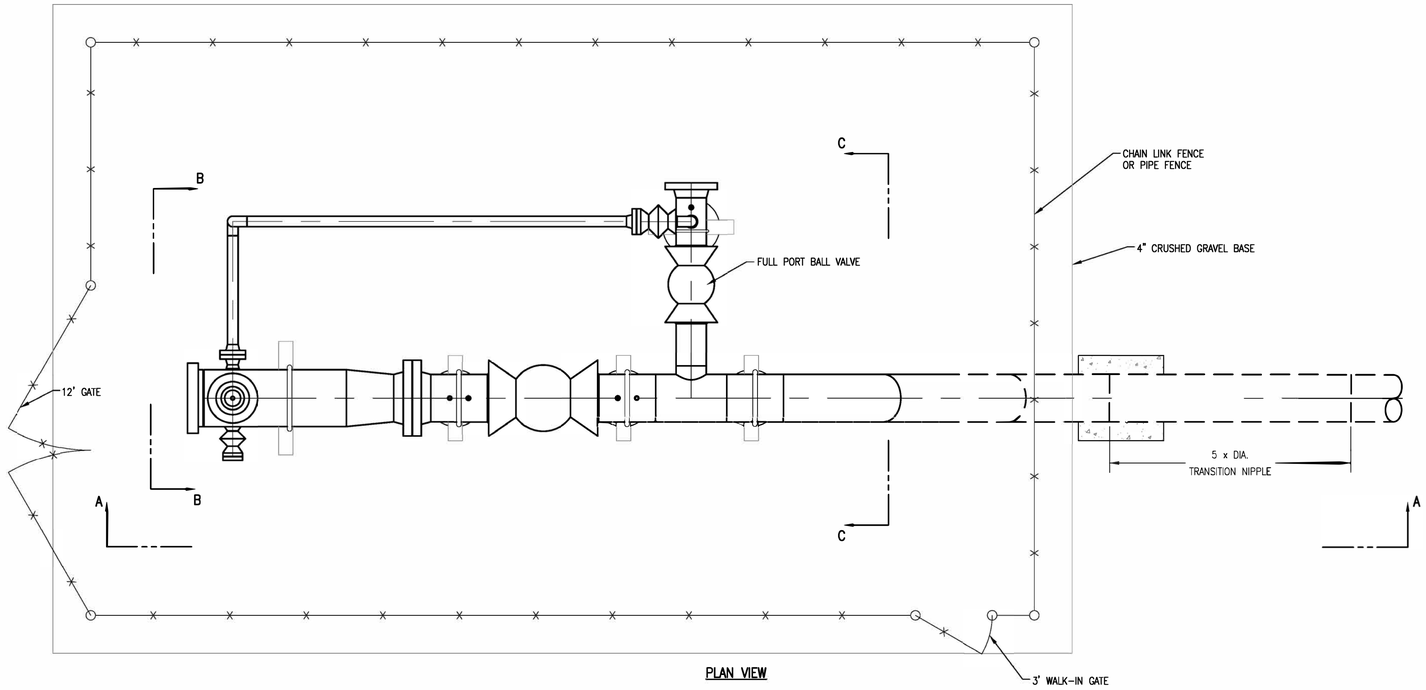
NO.	DATE	DRWN BY	DSGN BY	CHKD BY	DESCRIPTION
2	12/31/20	KM	PR	STAFF	UPDATED TYPICAL STANCHION REFERENCE DRAWING
1	11/7/16	KM	PR	STAFF	REMOVED BOM, ADDED NOTE, AND CALLOUTS

APPROVED AS FINAL
BY: K.MOTHERSHEAD
DATE: 12/31/20

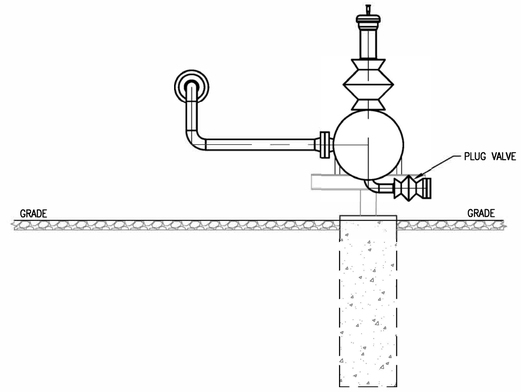
WBI ENERGY TRANSMISSION
An MDU Resources Group Company

TYPICAL DOUBLE PIG LAUNCHER VALVE SETTING

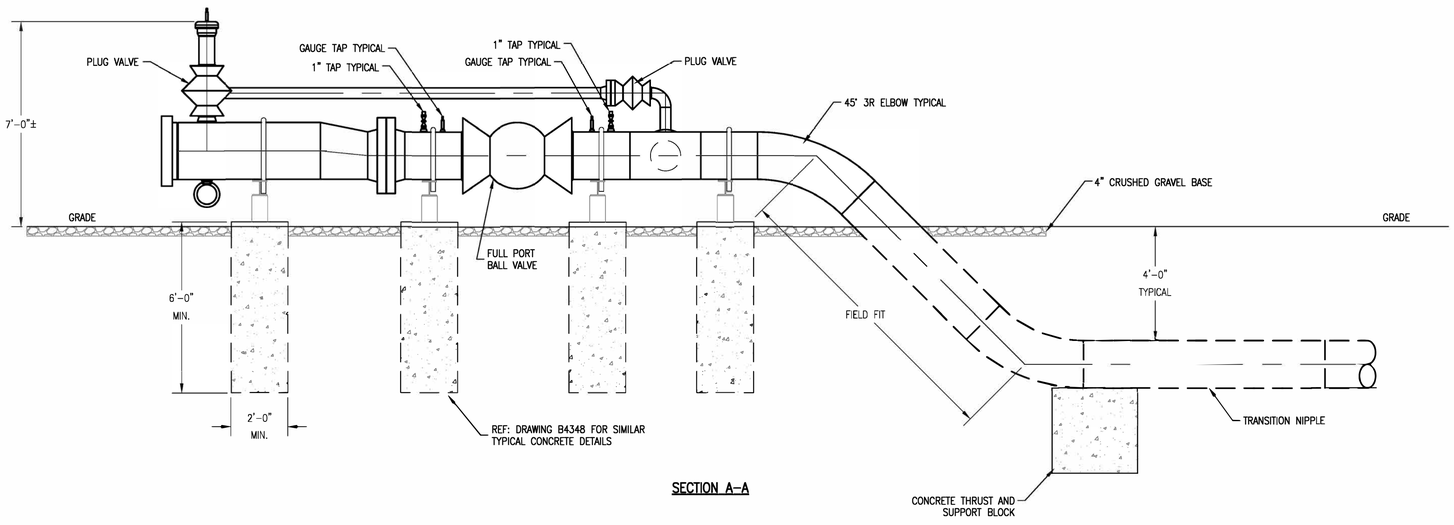
W.O. # STD.5111					
DESIGNED BY	P.RYAN				
DRAWN BY	KM				
CHECKED BY	GWH	SCALE	FILE NAME	DWG. NO.	SHEET NO.
DATE CREATED	10/05/16	3/8"=1'-0"	C1688	C-06-1688	1 OF 1



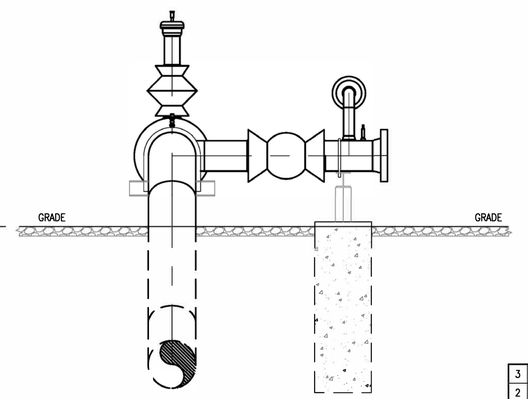
PLAN VIEW



SECTION B-B



SECTION A-A



SECTION C-C

NOTES:
- SUPPORTS MUST BE INSTALLED IN UNDISTURBED SOIL.
- TYPICAL 1" TAPS INCLUDE: 1" THREADOLET, 1" NIPPLE, 1" PLUG VALVE AND 1" HEX PLUG.
- TYPICAL GAUGE TAPS INCLUDE: 1/2" THREADOLET, H1C-24 AGCO VALVE AND 1/4" F.S. PLUG.

NO.	DATE	DRWN BY	DSGN BY	CHKD BY	DESCRIPTION
3	12/31/20	KM	P.R.	STAFF	UPDATED TYPICAL STANCHION REFERENCE DRAWING
2	11/7/16	KM	P.R.	STAFF	ADDED FENCE, GRAVEL, NOTE AND CALLOUTS

APPROVED AS FINAL
BY: GREG HECKMAN
DATE: 12/16/16

WBI ENERGY TRANSMISSION
An MDU Resources Group Company

TYPICAL LAUNCHER/RECEIVER VALVE SETTING

W.O. #	STD.5111
DESIGNED BY	P.RYAN
DRAWN BY	KM
CHECKED BY	STAFF
DATE CREATED	3/16/15

SCALE	FILE NAME	DWG. NO.	SHEET NO.
3/8"=1'-0"	C1661	C-06-1661	1 OF 1

APPENDIX E

ADDITIONAL TEMPORARY WORKSPACES (ATWS)

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_001	0.7	Agriculture, Developed	0.2	25.0	300.5	Bore	Cass
ATWS_001_a	0.4	Agriculture, Developed	0.2	140.2	142.6	Point of Inflection	Cass
ATWS_002	0.8	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_003	0.7	Agriculture, Developed	0.3	50.0	300.0	Bore	Cass
ATWS_004	0.8	Agriculture	0.3	50.0	301.4	Bore	Cass
ATWS_005	1.1	Agriculture	0.9	50.0	756.8	Bore	Cass
ATWS_006	1.1	Agriculture	0.8	153.0	890.9	Point of Inflection, Bore	Cass
ATWS_007	1.3	Agriculture	0.8	153.3	808.0	Bore, Point of Inflection	Cass
ATWS_008	1.4	Agriculture	0.8	50.0	675.7	Bore	Cass
ATWS_009	1.5	Agriculture	0.7	216.6	351.9	Point of Inflection, Bore	Cass
ATWS_010	1.5	Agriculture	0.2	58.4	241.6	Point of Inflection, Bore	Cass
ATWS_011	1.6	Agriculture	0.3	77.3	222.8	Bore, Point of Inflection	Cass
ATWS_012	1.6	Agriculture, Developed	0.4	172.7	319.3	Bore, Point of Inflection	Cass
ATWS_012_b	1.7	Agriculture	0.2	142.3	149.6	Point of Inflection	Cass
ATWS_012_c	1.8	Agriculture	0.2	92.6	184.6	Point of Inflection	Cass
ATWS_012_d	1.9	Agriculture	0.2	92.4	184.8	Point of Inflection	Cass
ATWS_013	2.6	Agriculture	0.3	50.0	301.2	Bore	Cass
ATWS_014	2.6	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_015	2.7	Agriculture, Developed	0.3	50.0	300.5	Bore	Cass
ATWS_016	2.7	Agriculture	0.2	25.0	300.6	Bore	Cass
ATWS_017	3.6	Agriculture	0.3	50.2	301.0	Bore	Cass
ATWS_018	3.6	Agriculture	0.2	25.0	300.0	Bore	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_019_b	3.8	Agriculture	0.3	23.0	629.6	Bore, Point of Inflection	Cass
ATWS_019_c	3.9	Agriculture	0.6	50.0	551.3	Bore	Cass
ATWS_019_d	3.9	Agriculture	0.2	23.0	300.0	Bore	Cass
ATWS_019_e	4.4	Agriculture	0.2	124.2	140.9	Point of Inflection	Cass
ATWS_019_f	4.6	Agriculture	0.2	140.5	142.1	Point of Inflection	Cass
ATWS_020	3.7	Agriculture, Developed	1.2	248.0	709.3	Bore, Point of Inflection,	Cass
ATWS_021	6.5	Agriculture, Developed	1.3	265.0	730.5	Bore, Point of Inflection	Cass
ATWS_022	6.5	Agriculture, Developed	0.2	20.0	410.8	Bore, Point of Inflection	Cass
ATWS_022_c	6.7	Agriculture	0.2	20.0	380.3	Bore	Cass
ATWS_022_d	6.7	Agriculture	0.6	50.0	550.0	Bore	Cass
ATWS_023	7.2	Agriculture, Developed	0.3	50.0	300.4	Bore	Cass
ATWS_024	7.2	Agriculture, Developed	0.3	50.0	300.4	Bore	Cass
ATWS_025	7.2	Agriculture, Developed	0.1	20.0	300.0	Bore	Cass
ATWS_026	7.2	Agriculture, Developed	0.1	20.0	300.1	Bore	Cass
ATWS_027	8.2	Agriculture	0.3	50.0	300.6	Bore	Cass
ATWS_028	8.2	Agriculture, Developed	0.3	50.0	300.4	Bore	Cass
ATWS_029	6.4	Agriculture	0.3	50.0	300.0	Bore	Cass
ATWS_030	6.4	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_031	8.3	Agriculture, Developed	0.5	167.7	290.7	Bore, Point of Inflection	Cass
ATWS_032	8.2	Agriculture, Developed	0.1	20.0	300.0	Bore	Cass
ATWS_033	8.2	Agriculture, Developed	0.2	25.0	300.3	Bore	Cass
ATWS_034	8.3	Agriculture, Developed	0.2	25.0	300.1	Point of Inflection, Bore	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_035	8.4	Agriculture	0.2	25.0	299.8	Bore, Point of Inflection	Cass
ATWS_036	8.4	Agriculture	0.5	225.0	249.8	Bore, Point of Inflection	Cass
ATWS_037	9.2	Agriculture, Developed	0.2	24.8	300.3	Bore	Cass
ATWS_038	9.3	Agriculture, Developed	0.4	186.9	238.0	Bore, Point of Inflection	Cass
ATWS_039	9.2	Agriculture, Developed	0.3	50.0	300.6	Bore	Cass
ATWS_040	5.4	Agriculture	0.3	50.0	300.5	Bore	Cass
ATWS_041	5.5	Agriculture	0.3	50.0	300.5	Bore	Cass
ATWS_042	9.3	Agriculture, Developed	0.3	76.7	279.0	Bore, Point of Inflection	Cass
ATWS_043	5.8	Agriculture	0.7	100.0	866.1	Bore	Cass
ATWS_044	5.4	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_045	4.9	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_046	6.1	Agriculture	0.7	100.0	850.6	Bore	Cass
ATWS_047	5.5	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_048	5	Agriculture	0.4	25.0	740.6	Bore	Cass
ATWS_050	5.2	Agriculture	0.4	100.0	463.3	Bore	Cass
ATWS_051	5.7	Agriculture	1.0	50.0	866.1	Bore	Cass
ATWS_052	4.9	Agriculture	0.3	50.0	300.5	Bore	Cass
ATWS_053	6.1	Agriculture	1.0	50.0	851.1	Bore	Cass
ATWS_053_b	6.3	Agriculture	0.2	99.9	141.7	Point of Inflection	Cass
ATWS_054	5.0	Agriculture	0.9	50.0	802.7	Bore	Cass
ATWS_056	5.2	Agriculture	0.7	150.0	547.7	Bore, Point of Inflection	Cass
ATWS_056_b	5.3	Agriculture	0.2	140.9	141.4	Point of Inflection	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_057	10.0	Agriculture	1.6	254.1	505.0	Bore	Cass
ATWS_058	10.0	Agriculture	0.7	104.7	424.8	Bore	Cass
ATWS_059	10.1	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_060	10.1	Agriculture	0.3	50.0	300.9	Bore	Cass
ATWS_061	10.6	Agriculture, Developed	0.2	25.0	300.0	Bore	Cass
ATWS_062	10.6	Agriculture, Developed	0.3	50.0	309.3	Bore	Cass
ATWS_063	10.7	Agriculture	0.2	32.5	297.8	Bore, Point of Inflection	Cass
ATWS_064	10.7	Agriculture	0.5	144.4	376.8	Bore, Point of Inflection	Cass
ATWS_065	12.2	Agriculture	0.4	96.5	369.2	Bore, Point of Inflection	Cass
ATWS_066	12.2	Agriculture	0.2	68.6	277.8	Bore, Point of Inflection	Cass
ATWS_067	12.6	Agriculture, Developed	0.2	25.0	300.0	Bore	Cass
ATWS_068	11.6	Agriculture	0.1	25.0	300.0	Bore	Cass
ATWS_069	12.7	Agriculture	0.2	25.0	300.3	Bore	Cass
ATWS_070	11.7	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_071	12.6	Agriculture, Developed	0.3	50.0	301.3	Bore	Cass
ATWS_072	12.1	Agriculture	0.2	26.8	324.9	Bore, Point of Inflection	Cass
ATWS_073	11.6	Agriculture	0.3	50.0	300.6	Bore	Cass
ATWS_074	12.7	Agriculture	0.3	50.0	300.6	Bore	Cass
ATWS_075	11.7	Agriculture	0.3	50.0	300.9	Bore	Cass
ATWS_076	12.1	Agriculture	0.4	110.9	361.9	Bore, Point of Inflection	Cass
ATWS_077	13.6	Agriculture	1.2	250.3	383.9	Bore, Point of Inflection	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_078	13.6	Agriculture	0.3	50.0	307.6	Bore, Point of Inflection	Cass
ATWS_079	13.8	Agriculture	0.1	15.0	315.4	Bore, Point of Inflection	Cass
ATWS_080	14.8	Agriculture	0.6	101.9	440.7	Bore, Point of Inflection	Cass
ATWS_081	13.7	Agriculture	1.1	250.2	392.4	Bore, Point of Inflection	Cass
ATWS_082	14.8	Agriculture	0.2	29.3	303.9	Bore, Point of Inflection	Cass
ATWS_083	15.7	Agriculture, Developed	0.3	50.0	301.3	Bore	Cass
ATWS_084	15.8	Agriculture	0.3	50.0	301.5	Bore	Cass
ATWS_085	14.7	Agriculture	0.1	15.0	329.9	Bore, point of Inflection	Cass
ATWS_086	15.7	Agriculture, Developed	0.2	25.0	299.7	Bore	Cass
ATWS_087	15.8	Agriculture	0.2	25.0	299.7	Bore	Cass
ATWS_088	14.7	Agriculture	0.7	149.4	378.3	Bore, Point of Inflection	Cass
ATWS_089	16.7	Agriculture	0.3	100.0	337.3	Bore	Cass
ATWS_091	16.8	Agriculture	0.2	24.9	299.7	Bore	Cass
ATWS_092	16.6	Agriculture	0.3	50.0	301.2	Bore	Cass
ATWS_094	16.8	Agriculture	0.3	50.0	301.5	Bore	Cass
ATWS_095	17.7	Agriculture	0.2	25.0	299.7	Bore	Cass
ATWS_096	17.8	Agriculture	0.2	25.0	299.7	Bore	Cass
ATWS_097	17.7	Agriculture	0.3	49.7	301.3	Bore	Cass
ATWS_098	17.8	Agriculture, Developed	0.3	50.0	301.5	Bore	Cass
ATWS_099	18.7	Agriculture	0.2	25.0	299.7	Bore	Cass
ATWS_100	18.8	Agriculture	0.2	25.0	299.7	Bore	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_101	18.7	Agriculture	0.3	50.0	301.3	Bore	Cass
ATWS_102	18.8	Agriculture, Developed	0.4	50.0	367.1	Bore	Cass
ATWS_103	19.7	Agriculture	0.5	102.1	416.6	Bore, Point of Inflection	Cass
ATWS_105	19.7	Agriculture	0.2	25.0	290.0	Bore, Point of Inflection	Cass
ATWS_107	19.8	Agriculture, Developed	0.2	25.0	339.6	Bore, Point of Inflection	Cass
ATWS_108	19.8	Agriculture, Developed	0.7	173.1	372.8	Bore, Point of Inflection	Cass
ATWS_109	20.8	Agriculture	0.2	25.0	300.0	Bore	Cass
ATWS_110	20.9	Agriculture	0.2	25.0	299.6	Bore	Cass
ATWS_111	20.8	Agriculture	0.3	50.0	301.1	Bore	Cass
ATWS_112	20.9	Agriculture	0.3	50.0	301.2	Bore	Cass
ATWS_113	21.8	Agriculture	0.2	25.0	299.8	Bore	Cass
ATWS_114	21.8	Agriculture	0.2	160.9	207.7	Bore, Point of Inflection	Cass
ATWS_115	21.8	Agriculture	0.3	50.0	301.1	Bore	Cass
ATWS_116	21.9	Agriculture, Developed	0.3	42.0	300.7	Bore, Point of Inflection	Cass
ATWS_116_b	22.3	Agriculture, Developed	0.2	142.3	156.7	Point of Inflection	Cass
ATWS_117	23.3	Agriculture	0.2	25.0	299.9	Bore	Cass
ATWS_119	23.3	Agriculture	0.3	50.0	300.8	Bore	Cass
ATWS_121	23.4	Agriculture	2.5	359.5	564.1	Bore, Kindred Border Station	Cass
ATWS_121_b	23.7	Agriculture, Developed	0.2	141.4	142.5	Point of Inflection	Cass
ATWS_123	24.0	Agriculture	0.7	100.0	850.0	Bore	Cass
ATWS_124	24.3	Agriculture	0.7	100.0	850.0	Bore	Cass

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_125	24.0	Agriculture	1.0	50.0	850.5	Bore	Cass
ATWS_126	24.3	Agriculture	1.0	50.0	850.5	Bore	Cass
ATWS_127	24.7	Agriculture	0.2	30.1	299.3	Bore	Cass
ATWS_128	24.8	Agriculture	0.2	25.0	299.8	Bore	Richland
ATWS_129	24.7	Agriculture	0.3	55.9	307.5	Bore	Richland
ATWS_130	24.8	Agriculture	0.3	50.0	300.9	Bore	Richland
ATWS_130_b	25.7	Agriculture	0.1	116.3	141.3	Point of inflection	Richland
ATWS_131	26.6	Agriculture	0.3	50.0	301.1	Bore	Richland
ATWS_132	26.6	Agriculture	0.1	14.2	299.9	Bore	Richland
ATWS_133	26.7	Agriculture	0.3	50.0	301.5	Bore	Richland
ATWS_134	26.7	Agriculture	0.1	14.5	299.6	Bore	Richland
ATWS_135	27.6	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_136	27.6	Agriculture	0.1	21.8	300.0	Bore	Richland
ATWS_137	27.7	Agriculture	0.3	50.0	300.7	Bore	Richland
ATWS_138	27.7	Agriculture	0.1	21.9	300.0	Bore	Richland
ATWS_138_b	28.2	Agriculture	0.2	140.6	141.4	Point of Inflection	Richland
ATWS_139	28.3	Agriculture	0.2	25.0	418.8	Bore	Richland
ATWS_140	28.4	Agriculture	0.2	25.0	401.5	Bore	Richland
ATWS_141	28.3	Agriculture	0.5	50.0	420.3	Bore	Richland
ATWS_142	28.4	Agriculture	0.5	50.0	400.0	Bore	Richland
ATWS_143	30.4	Agriculture, Developed	0.3	104.8	288.0	Bore, Point of Inflection	Richland
ATWS_144	29.3	Agriculture	0.2	25.0	299.8	Bore	Richland
ATWS_145	29.3	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_146	30.4	Agriculture	0.3	105.5	308.6	Bore, Point of Inflection	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_146_b	30.8	Agriculture	0.2	90.8	183.1	Point of Inflection	Richland
ATWS_146_c	30.9	Agriculture	0.2	90.6	183.3	Point of Inflection	Richland
ATWS_147	29.3	Agriculture	0.3	50.0	301.8	Bore	Richland
ATWS_148	29.3	Agriculture	0.3	50.0	300.9	Bore	Richland
ATWS_149	30.3	Agriculture	0.2	25.0	321.7	Bore	Richland
ATWS_150	30.3	Agriculture	0.4	104.6	383.9	Bore, Point of Inflection	Richland
ATWS_151	31.3	Agriculture, Forest	0.3	25.0	512.0	Bore, Valve Site #4	Richland
ATWS_152	31.4	Agriculture	0.3	25.0	512.0	Bore	Richland
ATWS_153	31.3	Agriculture, Developed	0.9	205.8	566.3	Bore, Valve Site #4	Richland
ATWS_154	31.4	Agriculture	0.6	50.0	511.6	Bore	Richland
ATWS_155	33.4	Agriculture	0.2	25.0	299.7	Bore	Richland
ATWS_156	33.5	Agriculture, Open Water	0.2	25.0	299.8	Bore	Richland
ATWS_157	32.3	Agriculture, Developed	0.2	25.0	299.8	Bore	Richland
ATWS_158	32.4	Agriculture	0.2	25.1	300.0	Bore	Richland
ATWS_159	33.4	Agriculture	0.3	50.0	301.6	Bore	Richland
ATWS_160	33.5	Agriculture, Open Water	0.3	50.0	300.9	Bore	Richland
ATWS_160_b	34.4	Agriculture, Developed	0.2	140.6	141.4	Point of Inflection	Richland
ATWS_160_c	34.5	Agriculture	0.8	151.2	398.0	Point of Inflection	Richland
ATWS_160_e	34.9	Agriculture	0.2	85.1	188.3	Point of Inflection	Richland
ATWS_160_f	35.0	Open Land	0.4	100.0	306.2	Point of Inflection	Richland
ATWS_161	32.3	Agriculture	0.3	50.0	301.6	Bore	Richland
ATWS_162	32.4	Agriculture	0.3	50.0	300.9	Bore	Richland
ATWS_162_b	32.6	Agriculture	0.2	141.8	141.9	Point of Inflection	Richland
ATWS_162_c	32.6	Agriculture, Open Water	0.7	148.5	281.5	Point of Inflection	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_163	35.6	Open Land	0.2	25.0	294.0	Bore	Richland
ATWS_164	35.6	Open Land	0.4	50.0	323.1	Bore	Richland
ATWS_165	35.7	Open Land	0.1	25.0	114.3	Bore	Richland
ATWS_166	35.7	Developed, Open Land	0.1	50.1	129.0	Bore	Richland
ATWS_167	36.1	Open Water	0.2	25.0	299.7	Bore	Richland
ATWS_169	36.2	Open Land	0.2	28.0	312.5	Bore	Richland
ATWS_170	36.2	Agriculture, Open Land	0.3	58.6	298.7	Bore	Richland
ATWS_171	36.7	Agriculture, Developed, Open Land	0.2	25.0	299.8	Bore	Richland
ATWS_172	36.7	Agriculture, Developed	0.4	50.0	327.3	Bore	Richland
ATWS_173	36.8	Agriculture, Forest, Open Land	0.5	124.0	448.3	Bore	Richland
ATWS_174	36.8	Agriculture, Forest	0.3	50.0	289.1	Bore	Richland
ATWS_175	37.5	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_176	37.5	Agriculture	0.2	25.0	300.3	Bore	Richland
ATWS_177	37.6	Agriculture	0.3	50.0	300.6	Bore	Richland
ATWS_178	37.6	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_179	38.5	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_180	38.5	Agriculture	0.2	25.0	300.3	Bore	Richland
ATWS_181	38.6	Agriculture	0.2	130.2	171.5	Bore, Point of Inflection	Richland
ATWS_182	38.6	Agriculture	0.6	255.2	296.5	Bore, Point of Inflection	Richland
ATWS_182_a	39.8	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_182_b	39.8	Agriculture, Developed	0.1	18.4	300.2	Bore	Richland
ATWS_182_c	39.9	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_182_d	39.9	Agriculture, Developed	0.1	18.9	300.0	Bore	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_183	40.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_184	40.4	Agriculture	0.1	20.9	300.2	Bore	Richland
ATWS_185	40.5	Agriculture	0.3	50.0	300.6	Bore	Richland
ATWS_186	40.5	Agriculture	0.1	20.9	300.0	Bore	Richland
ATWS_187	40.9	Agriculture	0.2	18.3	600.8	Bore	Richland
ATWS_188	40.9	Agriculture	0.9	125.0	599.8	Bore	Richland
ATWS_189	41.0	Agriculture	0.0	16.8	50.2	Bore, Point of Inflection	Richland
ATWS_190	41.1	Agriculture	0.5	25.0	953.4	Bore	Richland
ATWS_191	41.0	Agriculture, Developed	1.9	432.6	730.3	Bores, Point of Inflection	Richland
ATWS_191_b	41.1	Agriculture, Developed	0.1	65.0	100.1	Bore	Richland
ATWS_192	41.2	Agriculture	1.3	125.0	953.4	Bore	Richland
ATWS_192_b	41.9	Agriculture, Developed	0.2	69.6	195.4	Point of Inflection	Richland
ATWS_192_c	42.0	Agriculture	0.2	93.4	183.4	Point of Inflection	Richland
ATWS_192_d	41.3	Agriculture	0.2	25.0	300.3	Bore	Richland
ATWS_192_e	41.3	Agriculture	0.5	125.0	300.8	Bore	Richland
ATWS_193	42.4	Agriculture, Developed	0.3	70.6	230.1	Bore, Point of Inflection	Richland
ATWS_194	42.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_195	42.4	Agriculture, Developed	0.2	170.0	180.2	Bore, Point of Inflection	Richland
ATWS_196	42.4	Agriculture	0.2	25.0	300.3	Bore	Richland
ATWS_197	44.4	Agriculture, Developed	0.7	123.3	286.2	Bore, Point of Inflection	Richland
ATWS_198	44.4	Agriculture	0.2	40.7	290.1	Bore, Point of Inflection	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_199	44.5	Agriculture	0.2	40.7	288.8	Bore, Point of Inflection	Richland
ATWS_200	44.5	Agriculture	0.4	91.6	337.0	Bore, Point of Inflection	Richland
ATWS_201	44.9	Agriculture, Developed	0.3	31.4	460.7	Bore	Richland
ATWS_202	45.0	Agriculture, Developed	0.3	27.6	459.3	Bore	Richland
ATWS_203	45.4	Agriculture	0.1	16.3	300.1	Bore	Richland
ATWS_204	45.5	Agriculture, Developed	0.1	16.5	300.0	Bore	Richland
ATWS_205	44.9	Agriculture	0.7	124.9	460.0	Bore	Richland
ATWS_206	45.0	Agriculture	0.7	124.8	460.0	Bore	Richland
ATWS_207	45.4	Agriculture	0.3	48.8	300.0	Bore	Richland
ATWS_208	45.5	Agriculture, Developed	0.3	48.6	300.5	Bore	Richland
ATWS_209	46.4	Agriculture	0.2	25.0	300.1	Bore	Richland
ATWS_210	46.5	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_211	46.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_212	46.5	Agriculture	0.3	50.0	300.3	Bore	Richland
ATWS_212_d	47.4	Agriculture	0.1	62.2	140.3	Point of Inflection	Richland
ATWS_212_e	47.3	Agriculture	0.2	54.9	187.3	Point of Inflection	Richland
ATWS_213	47.9	Agriculture	0.4	51.8	300.1	Bore	Richland
ATWS_214	47.9	Developed	0.1	15.2	300.0	Bore	Richland
ATWS_215	48.0	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_216	48.0	Developed	0.1	16.5	300.0	Bore	Richland
ATWS_217	48.3	Agriculture, Developed	0.1	17.0	300.0	Bore, Point of Inflection	Richland
ATWS_218	48.4	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_219	48.3	Agriculture, Developed	0.4	142.0	255.7	Bore, Point of Inflection	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_220	48.4	Agriculture	0.3	46.6	300.0	Bore	Richland
ATWS_221	48.9	Agriculture	0.4	171.8	228.3	Point of Inflection, Valve Site #6, Bore	Richland
ATWS_222	48.8	Agriculture	0.2	46.8	253.2	Point of Inflection, Valve Site #6, Bore	Richland
ATWS_223	48.9	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_224	48.9	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_225	49.9	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_226	49.9	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_227	49.9	Agriculture	0.3	50.0	300.1	Bore	Richland
ATWS_228	49.9	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_228_b	50.4	Agriculture, Open Water	3.8	112.7	2979.3	Bore	Richland
ATWS_228_c	50.8	Agriculture, Forest, Open Water	1.5	25.0	2979.3	Bore	Richland
ATWS_228_d	51.8	Agriculture	3.2	112.6	2539.9	Bore	Richland
ATWS_228_e	51.4	Agriculture, Open Water	1.7	35.0	2540.3	Bore	Richland
ATWS_235	51.9	Agriculture	0.3	50.0	300.5	Bore	Richland
ATWS_236	51.9	Agriculture	0.2	24.8	300.0	Bore	Richland
ATWS_237	52.0	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_238	52	Agriculture	0.2	75.0	300.2	Bore	Richland
ATWS_239	52.9	Agriculture, Developed	0.3	50.0	300.5	Bore	Richland
ATWS_240	52.9	Agriculture, Developed	0.2	25.0	300.0	Bore	Richland
ATWS_241	53	Agriculture, Developed	0.3	59.9	319.8	Bore	Richland
ATWS_242	53	Agriculture, Developed	0.2	25.0	300.2	Bore	Richland
ATWS_242_b	53.9	Agriculture	0.2	127.5	142.3	Point of Inflection	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_243	57.1	Agriculture, Forest	0.4	25.0	630.0	Bore	Richland
ATWS_244	56.9	Agriculture	1.8	358.4	842.8	Bore, Point of Inflection	Richland
ATWS_245	57.5	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_246	57.1	Agriculture	1.0	125.0	683.5	Bore	Richland
ATWS_247	56.9	Agriculture	0.2	25.0	315.3	Bore, Point of Inflection	Richland
ATWS_248	57.5	Agriculture	0.2	25.0	300.1	Bore	Richland
ATWS_249	54.4	Agriculture	0.3	50.0	300.1	Bore	Richland
ATWS_250	54.4	Agriculture, Developed	0.3	50.0	300.0	Bore	Richland
ATWS_251	57.5	Agriculture, Developed	1.8	201.7	879.6	Bore, Point of Inflection	Richland
ATWS_252	57.5	Agriculture, Developed	0.1	26.3	248.2	Bore, Point of Inflection	Richland
ATWS_253	54.4	Agriculture	0.1	20.8	300.0	Bore	Richland
ATWS_254	54.4	Agriculture	0.1	20.8	300.1	Bore	Richland
ATWS_255	55.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_256	55.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_257	56.4	Agriculture	0.3	50.0	301.3	Bore	Richland
ATWS_258	56.4	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_259	55.4	Agriculture	0.2	25.0	300.0	Bore	Richland
ATWS_260	55.4	Agriculture	0.2	25.0	300.9	Bore	Richland
ATWS_261	56.4	Agriculture, Developed	0.1	17.1	300.0	Bore	Richland
ATWS_262	56.4	Agriculture	0.1	20.8	300.5	Bore	Richland
ATWS_263	57.7	Agriculture	0.7	100.0	490.6	Bore	Richland
ATWS_264	57.7	Agriculture	0.3	25.2	491.9	Bore	Richland
ATWS_267	57.8	Agriculture	0.2	26.6	300.1	Bore	Richland

APPENDIX E

Wahpeton Expansion Project Additional Temporary Workspaces (ATWS) [a]

Additional Temporary Workspaces[b]	Milepost	Existing Land Uses	Area Affected by Construction (acres)	Width (feet)	Length (feet)	Reason for ATWS	County
ATWS_268	57.8	Agriculture	0.3	50.0	300.5	Bore	Richland
ATWS_269	58.6	Agriculture, Developed	0.2	25.0	350.0	Bore	Richland
ATWS_270	58.6	Agriculture	0.3	50.0	300.5	Bore	Richland
ATWS_271	58.7	Agriculture	0.2	25.1	300.2	Bore	Richland
ATWS_272	58.7	Agriculture	0.3	50.0	300.0	Bore	Richland
ATWS_272_b	59.6	Agriculture	0.1	113.0	142.0	Point of Inflection	Richland
ATWS_273	60.1	Agriculture, Developed, Open Water	0.7	125.9	551.2	Point of Inflection, Bore	Richland
ATWS_274	60.1	Agriculture, Developed, Open Water	0.2	40.3	291.0	Point of Inflection, Bore	Richland
ATWS_275	60.2	Agriculture, Open Water	0.2	32.0	329.3	Bore, Point of Inflection	Richland
ATWS_276	60.1	Agriculture	0.9	183.3	531.0	Bore, Point of Inflection	Richland
ATWS_277	60.5	Agriculture, Developed, Open Water	2.4	365.0	516.1	Wahpeton Border Station	Richland

[a] ATWS outside of the 75-foot-wide construction right-of-way would be required for certain road crossings, points of inflection along the route, areas where special construction methods would be implemented (e.g., the guided bore method), and areas where additional space would be needed for storage of stripped topsoil. All proposed ATWS would be on privately owned land.

[b] All ATWS are associated with pipeline facilities except ATWS_121 and ATWS_277. ATWS_121 is associated with the MDU-Kindred Border Station and ATWS_277 is associated with the MDU-Wahpeton Border Station.

APPENDIX F

ACCESS ROADS

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_001	0.0	Dirt/Vegetation	TEMP	Existing, New	Agricultural, Developed	763	30	0.5	0.0
AR_001.1	0.7	Dirt / Vegetation	TEMP	New	Agriculture, Developed	354	30	0.3	0.0
AR_001.2	0.8	Dirt / Vegetation	TEMP	New	Agriculture	319	30	0.3	0.0
AR_002	1.7	Gravel/Dirt	TEMP	Existing, New	Agricultural, Developed	114	30	0.1	0.0
AR_002.1	3.6	Dirt / Vegetation	TEMP	New	Agriculture, Developed	225	30	0.2	0.0
AR_003	3.7	Dirt / Vegetation	TEMP	Existing, New	Agricultural, Developed	127	28	0.1	0.0
AR_004	4.2	Dirt	TEMP	Existing	Agricultural, Developed	60	30	<0.1	0.0
AR_005	5.1	Dirt / Vegetation	TEMP	New	Agricultural, Developed, Open Water	1,377	30	0.9	0.0
AR_Kost1	5.2		TEMP	Existing	Developed	902	40	0.8	0.0
AR_Kost2	5.2		TEMP	Existing	Developed	97	39	0.1	0.0
AR_006	5.4	Gravel/Dirt	TEMP	Existing	Agricultural, Developed	1,098	30	0.8	0.0
AR_007	5.9	Dirt / Vegetation	TEMP	Existing, New	Agricultural, Developed	307	30	0.2	0.0
AR_007.1	6.6	Dirt / Vegetation	TEMP	New	Agriculture, Developed	66	30	0.1	0.0

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_007.2	6.8	Dirt / Vegetation	TEMP	New	Agriculture, Developed	44	40	<0.1	0.0
AR_008	7.2	Dirt / Vegetation	TEMP	Existing	Agricultural, Developed	56	30	<0.1	0.0
AR_009	7.4	Vegetation	TEMP	Existing	Agricultural, Developed	77	40	0.1	0.0
AR_010	8.2	Dirt / Vegetation	TEMP	Existing	Developed	75	30	0.1	0.0
AR_011	8.3	Dirt / Vegetation	TEMP	Existing, New	Agricultural, Developed	248	30	0.2	0.0
AR_012	8.7	Dirt / Vegetation	TEMP	Existing	Agricultural, Developed	74	30	0.1	0.0
AR_013	10.0	Dirt / Vegetation	TEMP	New	Agricultural, Open Water	3,455	40	2.4	0.0
AR_014	10.0	Dirt / Vegetation	TEMP	Existing	Agricultural	1,929	30	1.3	0.0
AR_015	11.2	Dirt / Vegetation	TEMP	Existing	Agricultural, Developed	48	30	<0.1	0.0
AR_016	11.6	Dirt / Vegetation	PERM	New	Agricultural, Developed	104	40	0.1	0.1
AR_016.1	11.7	Dirt / Vegetation	TEMP	New	Agriculture, Developed	49	40	<0.1	0.0
AR_017	13.2	Vegetation	TEMP	New	Agricultural, Developed	89	32	0.1	0.0
AR_018	13.7	Vegetation	TEMP	Existing, New	Agricultural	139	30	0.1	0.0

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_019	14.8	Vegetation	TEMP	New	Agricultural, Open Water	40	30	<0.1	0.0
AR_019.1	15.7	Vegetation	TEMP	New	Developed	31	30	<0.1	0.0
AR_020	16.2	Dirt / Vegetation	TEMP	New	Agricultural, Developed	81	35	0.1	0.0
AR_022	17.1	Dirt	TEMP	New	Agricultural, Developed	85	34	0.1	0.0
AR_023	18.3	Vegetation	TEMP	New	Agricultural, Developed	82	35	0.1	0.0
AR_023.1	18.8	Vegetation	TEMP	New	Agriculture	77	30	0.1	0.0
AR_024	19.3	Vegetation	TEMP	New	Agricultural, Developed, Open Water	90	32	0.1	0.0
AR_024.1	20.1	Vegetation	TEMP	New	Agriculture, Developed	65	46	0.1	0.0
AR_024.2	20.8	Vegetation	TEMP	New	Agriculture, Developed	49	27	<0.1	0.0
AR_042.3	21.8	Vegetation	TEMP	New	Agriculture, Developed	137	30	0.1	0.0
AR_Kindred1	21.8		TEMP	Existing	Agriculture, Developed, Forest	283	40	0.3	0.0
AR_025	22.3	Dirt	TEMP	Existing	Agricultural, Developed	59	30	<0.1	0.0
AR_026	23.4	Dirt	PERM	New	Agricultural, Developed	171	0	0.1	0.1

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_027	24.1	Dirt	TEMP	New	Agricultural, Developed	540	40	0.4	0.0
AR_028	24.2	Dirt	TEMP	New	Agricultural	447	40	0.3	0.0
AR_028.1	24.4	Dirt	TEMP	New	Agriculture, Developed	97	40	0.1	
AR_029	24.7	Dirt	TEMP	New	Agricultural	120	30	0.1	0.0
AR_030	25.7	Vegetation	TEMP	New	Agricultural, Developed	163	29	0.1	0.0
AR_032	28.3	Dirt / Vegetation	TEMP	Existing, New	Agricultural	138	30	0.1	0.0
AR_032.1	29.3	Dirt / Vegetation	TEMP	New	Agriculture, Developed	166	30	0.1	0.0
AR_033	29.3	Dirt / Vegetation	TEMP	Existing	Agricultural, Open Water	106	30	0.1	0.0
AR_033.1	30.3	Dirt / Vegetation	TEMP	New	Agriculture, Developed	78	30	0.1	0.0
AR_033.2	30.3	Dirt / Vegetation	TEMP	New	Agriculture, Developed	378	30	0.3	0.0
AR_034	31.3	Dirt / Vegetation	PERM	Existing, New	Agricultural, Developed, Open Water	258	30	0.2	0.2
AR_035	32.4	Dirt / Vegetation	TEMP	New	Agricultural, Developed	113	30	0.1	0.0
AR_036	32.4	Dirt / Vegetation	TEMP	New	Agricultural, Developed	116	30	0.1	0.0

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_038	34.5	Dirt / Vegetation	TEMP	New	Agricultural, Open Land, Open Water	749	40	0.7	0.0
AR_039	34.5	Gravel	TEMP	Existing	Agricultural, Developed, Forest, Open Land, Open Water	3,245	30	2.2	0.0
AR_040	36.7	Gravel / Vegetation	TEMP	Existing, New	Agricultural	851	66	0.6	0.0
AR_041	36.8	Dirt / Vegetation	TEMP	Existing	Agricultural, Open Land	38	26	<0.1	0.0
AR_042	39.0	Vegetation	TEMP	New	Agricultural	138	30	0.1	0.0
AR_043	39.5	Dirt / Vegetation	PERM	New	Agricultural, Developed	250	30	0.2	0.2
AR_043.1	40.5	Dirt / Vegetation	TEMP	New	Agriculture, Developed	68	30	0.0	0.0
AR_043.2	41.0	Dirt	TEMP	New	Agriculture, Developed	2284	30	1.6	0.0
AR_043.3	41.0	Dirt	TEMP	New	Agriculture, Developed	2382	30	1.6	0.0
AR_044	42.0	Dirt / Vegetation	TEMP	Existing, New	Agricultural, Developed	141	40	0.1	0.0
AR_045	42.7	Vegetation	TEMP	New	Agricultural, Developed	70	42	<0.1	0.0
AR_046	43.4	Vegetation	TEMP	Existing	Agricultural	62	30	<0.1	0.0
AR_046.1	44.1	Dirt / Vegetation	TEMP	Existing	Agriculture, Developed, Open Water	65	40	0.1	0.0

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_047	44.9	Vegetation	TEMP	New	Agricultural	16	40	<0.1	0.0
AR_048	45.0	Vegetation	TEMP	New	Agricultural, Developed	26	40	<0.1	0.0
AR_049	46.2	Dirt	TEMP	New	Agricultural, Developed, Open Water	71	40	<0.1	0.0
AR_050	46.9	Dirt / Vegetation	TEMP	New	Agricultural, Developed	65	46	<0.1	0.0
AR_051	47.3	Dirt	TEMP	New	Agricultural, Developed, Open Water	64	30	<0.1	0.0
AR_052	48.0	Dirt	TEMP	Existing	Developed	38	30	<0.1	0.0
AR_053	48.3	Vegetation	TEMP	New	Agricultural, Developed	21	30	<0.1	0.0
AR_054	48.7	Dirt / Vegetation	TEMP	New	Agricultural, Developed	66	45	<0.1	0.0
AR_055	48.9	Dirt/Vegetation	PERM	New	Agricultural, Developed	105	40	<0.1	<0.1
AR_056	50.9	Dirt / Vegetation/ Gravel	PERM	Existing, New	Agricultural, Developed, Forest, Open Water	2,521	40	2.3	2.3
AR_057	52.9	Dirt	TEMP	Existing	Agricultural, Developed	63	30	<0.1	0.0
AR_058	52.0	Dirt / Vegetation	TEMP	New	Agricultural, Developed	265	30	0.2	0.0
AR_059	53.9	Dirt / Vegetation	TEMP	New	Agricultural, Developed	114	9	0.1	0.0

APPENDIX F

Wahpeton Expansion Project Access Roads [a]

Access Road Name	Milepost	Existing Road Type	Use (TEMP or PERM)	Existing or New	Existing Land Uses	Length (feet)	Width (feet)	Area Affected by Construction (acres)	Area Affected by Operations (acres)
AR_060	56.4	Dirt / Vegetation	TEMP	Existing	Agricultural, Developed, Open Water	94	40	0.1	0.0
AR_061	56.4	Dirt / Vegetation	TEMP	Existing	Agricultural, Developed	67	37	<0.1	0.0
AR_062	57.5	Vegetation	TEMP	Existing, New	Agricultural, Developed	961	30	0.6	0.0
AR_062.1	57.6	Vegetation	TEMP	New	Developed	36	28	<0.1	0.0
AR_062.2	57.6	Dirt / Vegetation	TEMP	New	Agriculture, Developed	61	40	0.1	0.0
AR_063	58.6	Vegetation	TEMP	New	Agricultural	36	36	<0.1	0.0
AR_064	58.7	Dirt	TEMP	Existing	Agricultural, Developed, Open Water	36	30	<0.1	0.0
AR_065	60.5	Dirt/Vegetation	PERM	Existing, New	Agricultural, Developed	171	4	0.1	0.1
AR_Wahp1	60.5		TEMP	New	Developed	65	40	0.1	0.0

AR = access road; PERM = permanent; TBD = to be determined; TEMP = temporary.

[a] Modifications may include: grading; widening up to 40 feet (including the access road entrances off of public roads), placement of mats, gravel, or crushed rock for stability and surface improvement; replacing or installing culverts; and clearing of overhead vegetation, if present.

APPENDIX G

SUMMARY OF GUIDED BORE LOCATIONS

APPENDIX G

Wahpeton Expansion Project Summary of Guided Bore Locations

Milepost	Feature Crossed	Length (feet)	Min Bore Depth (feet)	ATWS setbacks from Wetlands/Waterbodies (west or north bank/east or south bank)	Hours per Day of Drilling	Days of Drilling	Geologic Formation / Deposit Type [1]	Map Unit	Site-Specific Plan (Yes/No)	Water Needed for Drilling Fluid (gal)	Water Needed for Hydrostatic Testing (gal)
0.74	35th St SE	193	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	12,610	1,408
1.23	Maple River	750	28’	316 feet / 255 feet	24	4 to 6	Oahe / River Sediment	Qor	Y	49,003	5,472
1.55	163rd Ave SE	231	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	15,093	1,685
2.67	164th Ave SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
3.67	165th Ave SE	134	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	8,755	978
3.85	Drainage Ditch	400	10’	46 feet / 86 feet	12	2 to 4	Oahe / River Sediment	Qor	Y	26,135	2,918
4.90	36th St SE[a]	388	13’	133 feet / 130 feet	12	2 to 3	Oahe / River Sediment	Qor	Y	25,351	2,831
5.14	BNSF Railroad[a]	461	17’	150 feet / 134 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	30,121	3,363
5.44	Driveway	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
5.94	Interstate 94[a]	766	15	350 feet / 60 feet	24	4 to 6	Oahe / River Sediment	Qor	Y	50,048	5,589
6.48	165th Ave SE	200	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	13,067	1,459
6.64	Drainage Ditch	450	12’	133 feet / 157 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	29,402	3,282
7.19	38th St SE	179	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	11,695	1.306
8.19	39th St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
8.36	165th Ave SE	160	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	10.454	1,167
9.24	40th St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
10.03	Wetland	322	10’	53 feet / 66 feet	12	2 to 3	Oahe / River Sediment	Qor	Y	21,039	2,349
10.61	41st St SE[b]	225	6’	72 feet / 63 feet	12	2 to 3	Oahe / River Sediment	Qor	N	14,701	1,642
11.67	42nd Ave SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
12.15	166th Ave SE	156	6’	N/A	12	2 to 3	Coleharbor / Proglacial Lake	Qcof	N	10,193	1,138
12.67	43rd St SE	96	6’	N/A	12	1 to 2	Coleharbor / Proglacial Lake	Qcof	N	6,272	700

APPENDIX G

Wahpeton Expansion Project Summary of Guided Bore Locations

Milepost	Feature Crossed	Length (feet)	Min Bore Depth (feet)	ATWS setbacks from Wetlands/Waterbodies (west or north bank/east or south bank)	Hours per Day of Drilling	Days of Drilling	Geologic Formation / Deposit Type [1]	Map Unit	Site-Specific Plan (Yes/No)	Water Needed for Drilling Fluid (gal)	Water Needed for Hydrostatic Testing (gal)
13.68	44th St SE[a]	245	6’	8 feet / 8 feet	12	2 to 3	Coleharbor / Proglacial Lake	Qcof	N	16,008	1,787
14.70	45th St SE[a]	320	6’	9 feet / 8 feet	12	2 to 3	Coleharbor / Proglacial Lake	Qcof	N	20,908	2.335
15.73	46th St SE[a]	120	6’	21 feet / 5 feet	12	2 to 3	Coleharbor / Proglacial Lake	Qcof	N	7,840	875
	Red River RR/ 47th St SE[c]								Y	24,894	2,780
16.71		381	12’	N/A	12	3 to 4	Oahe / River Sediment	Qor			
17.74	48th St SE	180	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	11,761	1,313
18.75	49th St SE/Wetland[a]	350	10’	102feet / 50 feet	12	2 to 3	Oahe / River Sediment	Qor	Y	22,868	2,554
19.75	50th St SE[b]	294	6’	18 feet / 119 feet	12	2 to 3	Oahe / River Sediment	Qor	N	19.209	2,145
20.82	51st St SE	162	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	10,585	1,182
21.82	52nd St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
23.33	53rd St SE	143	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	9,343	1,043
24.15	Sheyenne River	750	26’	235 feet / 310 feet	24	4 to 6	Oahe / River Sediment	Qor	Y	49,003	5,472
24.72	County Rd 46	230	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	15,028	1,678
26.64	County Rd 26	104	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	6,795	759
27.65	167th Ave SE[a]	123	6’	16 feet / 70 feet	12	2 to 3	Oahe / River Sediment	Qor	N	8,036	897

APPENDIX G

Wahpeton Expansion Project Summary of Guided Bore Locations

Milepost	Feature Crossed	Length (feet)	Min Bore Depth (feet)	ATWS setbacks from Wetlands/Waterbodies (west or north bank/east or south bank)	Hours per Day of Drilling	Days of Drilling	Geologic Formation / Deposit Type [1]	Map Unit	Site-Specific Plan (Yes/No)	Water Needed for Drilling Fluid (gal)	Water Needed for Hydrostatic Testing (gal)
28.30	55th St SE[a]	300	11’	58 feet / 104 feet	12	2 to 3	Oahe / River Sediment	Qor	Y	19,601	2,189
29.30	56th St SE[b]	96	6’	50 feet / 6 feet	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
30.32	57th St SE	128	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	8,363	934
31.36	58th St SE[a]	413	10’	48 feet / 160 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	26,984	3,013
32.37	59th St SE	111	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	7,00
35.63	62nd St SE[a]	111	6’	53 feet / 35 feet	12	2 to 3	Oahe / Wind Blown Sediment	QTou	N	7,252	810
36.14	168th Ave SE[a]	263	6’	0 feet / 106 feet	12	2 to 3	Oahe / Wind Blown Sediment	QTou	N	17,184	1,919
36.76	63rd St SE	108	6’	N/A	12	2 to 3	Oahe / Wind Blown Sediment	QTou	N	7,056	788
37.54	County Rd 1	130	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	8,494	948
38.54	170th Ave SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
39.87	Irrigation Drainage Unit /Ephemeral Stream	400	11’	190 feet / 200 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	26,135	2,918
40.47	171st Ave SE	111	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	7,252	810
40.97	Interstate 29	500	20’	N/A	24	3 to 5	Oahe / River Sediment	Qor	Y	32,669	3.648
41.03	64th St SE/Unnamed tributary to Wild Rice River[b]	400	11’	5 feet / 53 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	26,135	2,918

APPENDIX G

Wahpeton Expansion Project Summary of Guided Bore Locations

Milepost	Feature Crossed	Length (feet)	Min Bore Depth (feet)	ATWS setbacks from Wetlands/Waterbodies (west or north bank/east or south bank)	Hours per Day of Drilling	Days of Drilling	Geologic Formation / Deposit Type [1]	Map Unit	Site-Specific Plan (Yes/No)	Water Needed for Drilling Fluid (gal)	Water Needed for Hydrostatic Testing (gal)
41.26	Tree row	300	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	13,067	1,459
42.40	County Rd[a] 4 and North Country National Scenic Trail	130	6’	5 feet / 3 feet	12	2 to 3	Oahe / River Sediment	Qor	N	8,494	948
44.41	67th St SE	217	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	14,178	1,583
44.95	Pitcairn Creek	413	10’	68 feet / 93 feet	12	3 to 5	Oahe / River Sediment	Qor	Y	26,984	3.013
45.42	County Rd 6	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
46.42	69th St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
47.97	Private Driveway	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
48.35	70th St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
49.89	174th Ave SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
51.10	Antelope/Wild Rice River #1-3	2,879	29’ Antelope River & 26-31’ Wild Rice River #1	125 feet / 275 feet	24	12 to 15	Oahe / River Sediment	Qor	Y	188,106	21,005
51.93	County Rd 81[a]	242	6’	144 feet / 30 feet	12	2 to 3	Coleharbor / Proglacial Lake	Qcof	N	15,812	1,766
52.93	177thAve SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
54.40	71st St SE	130	6’	N/A	12	2 to 3	Oahe / River Sediment	Qor	N	8,494	948

APPENDIX G

Wahpeton Expansion Project Summary of Guided Bore Locations

Milepost	Feature Crossed	Length (feet)	Min Bore Depth (feet)	ATWS setbacks from Wetlands/Waterbodies (west or north bank/east or south bank)	Hours per Day of Drilling	Days of Drilling	Geologic Formation / Deposit Type [1]	Map Unit	Site-Specific Plan (Yes/No)	Water Needed for Drilling Fluid (gal)	Water Needed for Hydrostatic Testing (gal)
55.41	72nd St SE[b]	96	6’	5 feet / 55 feet	12	1 to 2	Coleharbor / Glacial	Qcew	N	6,272	700
56.41	73rd St SE[b]	110	6’	3 feet / 55 feet	12	2 to 3	Coleharbor / Glacial	Qcew	N	7,187	803
57.00	Wild Rice River #4	630	25’	210 feet / 225 feet	12	4 to 6	Oahe / River Sediment	Qor	Y	41,163	4.596
57.49	74th St SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
57.57	Wild Rice River #5	640	27’	62 feet / 265 feet	24	4 to 6	Oahe / River Sediment	Qor	Y	41,816	4,669
57.72	178th Ave SE	96	6’	N/A	12	1 to 2	Oahe / River Sediment	Qor	N	6,272	700
58.65	179th Ave SE[b]	148	6’	58 feet / 4 feet	12	2 to 3	Coleharbor / Glacial	Qcew	N	9,670	1,080
60.10	180th Ave SE[a]	257	6’	0 feet/ 0 Feet	12	2 to 3	Coleharbor / Glacial	Qcew	N	16,792	1,875

[a] This guided bore would also cross one or more wetlands.

[b] This guided bore would also cross a waterbody.

[c] The proposed bore at the Red River Railroad was extended by WBI Energy to 47th Street. The water for the 47th Street bore is included in the Red River data.

Notes

[1] North Dakota Geological Survey (2021b)

APPENDIX H

ROAD AND RAILROAD CROSSINGS

APPENDIX H

Road and Railroad Crossings

Facility / Milepost	Type	Existing Road Type	Name	Crossing Method	Approximate Width of Road and Railroad at Crossing[a] (feet)
0.7	Road	Paved	35 St SE	Bore	25
1.5	Road	Paved	163rd Ave SE	Bore	24
2.7	Road	Dirt	164th Ave SE	Bore	13
3.7	Road	Dirt	165th Ave SE	Bore	26
4.9	Road	Paved	36th St SE	Bore	35
5.1	Railroad	N/A	Burlington Northern Santa Fe	Bore	21
5.9	Road	Dirt	Local Neighborhood Road, Rural Road	Bore	17
5.9	Road	Paved	I-94	Bore	50
5.9	Road	Paved	I-94	Bore	53
5.9	Road	Paved	37th St SE	Bore	30
6.5	Road	Paved	165th Ave SE	Bore	26
7.2	Road	Dirt	38th St SE	Bore	24
8.2	Road	Dirt	39th St SE	Bore	17
8.4	Road	Paved	165th Ave SE	Bore	35
9.2	Road	Dirt	40th St SE	Bore	20
10.7	Road	Dirt	41st St SE	Bore	40
10.7	Road	Dirt	166th Ave SE	Bore	18
11.7	Road	Dirt	42nd St SE	Bore	20
12.2	Road	Dirt	166th Ave SE	Bore	26
12.7	Road	Dirt	43rd St SE	Bore	13
13.7	Road	Dirt	44th St SE	Bore	49
13.7	Road	Dirt	166th Ave SE	Bore	16
14.7	Road	Dirt	45th St SE	Bore	26
14.7	Road	Dirt	166th Ave SE	Bore	12
15.7	Road	Dirt	46th St SE	Bore	30
16.7	Railroad	N/A	Red River Valley and Western	Bore	20
16.7	Road	Dirt	47th St SE	Bore	16
17.7	Road	Paved	48th St SE	Bore	28
18.8	Road	Dirt	49th St SE	Bore	19
19.8	Road	Dirt	50th St SE	Bore	17
19.8	Road	Dirt	166th Ave SE	Bore	13
20.8	Road	Gravel	51st St SE	Bore	15
21.8	Road	Dirt	52nd St SE	Bore	30
23.3	Road	Dirt	53rd St SE	Bore	20
24.7	Road	Paved	54th St SE	Bore	25
26.6	Road	Paved	166th Ave SE	Bore	26
27.7	Road	Paved	167th Ave SE	Bore	20

APPENDIX H

Road and Railroad Crossings

Facility / Milepost	Type	Existing Road Type	Name	Crossing Method	Approximate Width of Road and Railroad at Crossing[a] (feet)
28.3	Road	Two-track	55th St SE	Bore	8
29.3	Road	Dirt	Local Neighborhood Road, Rural Road	Bore	20
30.3	Road	Dirt	57th St SE	Bore	28
31.4	Road	Dirt	58th St SE	Bore	18
32.4	Road	Dirt	59th St SE	Bore	17
32.6	Road	Two-track	Local Neighborhood Road, Rural Road	Open-cut	13
33.4	Road	Paved	60th St SE	Bore	28
34.5	Road	Dirt	61st St SE	Bore	15
35.6	Road	Dirt	62nd St SE	Bore	20
36.1	Road	Dirt	168th Ave SE	Bore	40
36.2	Road	Dirt	Local Neighborhood Road, Rural Road	Open-cut	25
36.8	Road	Dirt	63rd St SE	Bore	21
37.5	Road	Dirt	169th Ave SE	Bore	29
38.5	Road	Dirt	170th Ave SE	Bore	18
40.5	Road	Dirt	171st Ave SE	Bore	21
40.9	Road	Paved	I-29	Bore	39
41.0	Road	Paved	I-29	Bore	39
41.0	Road	Dirt	64th St SE	Bore	37
42.4	Road	Paved	65th St SE	Bore	24
44.4	Road	Dirt	67th St SE	Bore	24
44.4	Road	Dirt	172nd Ave SE	Bore	32
45.4	Road	Dirt	68th St SE	Bore	25
46.4	Road	Two-track	69th St SE	Bore	13
48.0	Road	Dirt	Private Road for service vehicles (logging, oil fields, ranches, etc.)	Bore	22
48.3	Road	Dirt	70th St SE	Bore	24
48.9	Road	Dirt	173rd Ave SE	Bore	22
49.9	Road	Dirt	174th Ave SE	Bore	21
51.9	Road	Gravel	176th Ave SE	Bore	21
52.9	Road	Dirt	177th Ave SE	Bore	33
53.2	Railroad b	N/A	Historic – MILW	Open-cut	N/A
54.4	Road	Dirt	71st St SE	Bore	29
54.2	Railroad b	N/A	Historic – MILW	Open-cut	N/A
55.4	Road	Two-track	72nd St SE	Bore	38
56.4	Road	Dirt	73rd St SE	Bore	22
57.5	Road	Dirt	74th St SE	Bore	24
57.7	Road	Dirt	178th Ave SE	Bore	14

APPENDIX H

Road and Railroad Crossings

Facility / Milepost	Type	Existing Road Type	Name	Crossing Method	Approximate Width of Road and Railroad at Crossing[a] (feet)
58.6	Road	Dirt	179th Ave SE	Bore	25
60.1	Road	Paved	180th Ave SE	Bore	69

[a] For bore crossings, refer to Appendix E for bore length from pit to pit.

[b] Construction across the three historic railroad crossings would be conducted using conventional open-cut methods in accordance with the FERC Plan and other site-specific plans and permits. All three crossings would be in agricultural lands. Backhoe type excavators would be used to open a trench. Spoil materials excavated from the trench would be placed along the construction right-of-way, with topsoil and subsoil materials clearly segregated within approved workspace boundaries. A prefabricated segment of pipeline would then be placed into the trench using side-boom tractors. Once the pipe has successfully been installed across the historic railroad crossing, the trench would be backfilled, contours would be restored as near as practicable to preconstruction contours, and the site would be stabilized/reclaimed. Stabilization measures may include seeding and installation of erosion controls as appropriate. Each open-cut historic railroad crossing is proposed to be completed and restored within a few days.

APPENDIX I

PROPOSED MODIFICATIONS TO THE FERC PROCEDURES

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
VI.B.1.a	Locate all extra workspace (ATWS; such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.	33.4/33.5	Locate ATWS 159 and ATWS 160 in an emergent wetland wrib007e	ATWSs in wetland wrib007e	The ATWSs south of the road (ATWS 156 and ATWS 160) would be used for staging and spoil storage associated with the guided bore of County Road 2. This workspace would be in an agricultural hay field that includes emergent wetland wrib007e. The wetland begins between MPs 33.4 and 33.5, about 95 feet south of the road and extends south from there for approximately 550 feet. Most of ATWS 156 and a small portion of ATWS 160 would be in wrib007e (but most of ATWS 160 would be 40 or more feet from the edge of the wetland). To avoid having ATWS in this wetland, either the road bore, which would be about 185 feet long, would need to be extended or spoil from the road bore would need to be moved another 590 feet further south. The first option would nearly quadruple the length of the bore. The second would require additional equipment traffic back and forth within the wetland to relay the bore spoil to the new ATWS outside of the wetland. Neither of these options is practicable or warranted given that implementation of the Procedures would protect and restore the wetland. Additionally, only 0.9 acre of the emergent wetland would be affected by the workspace (construction right-of-way and ATWS) for the bore and the wetland consists mostly (90 percent cover) of foxtail barley and lesser amounts of other mostly fast growing species including yellow foxtail and reed canary grass, which would quickly recolonize any disturbed areas. WBI Energy would protect and restore wetland wrib007e by implementing FERC's procedures.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		35.65	Locate ATWSs 165 and 166 within 50 feet of an emergent wetland wrib016e associated with a road ditch adjacent to 62nd Street SE.	ATWSs within 14 to 15 feet of wetland wrib016e and within 40 feet of wetland wrib017e	The ATWS south of the road would be needed for staging and spoil storage associated with the guided bore of 62nd Street SE. This workspace would be in open land between emergent wetland wrib016e, adjacent to the road and emergent wetland wrib017e to the south. Both wetlands are dominated by the following three species in different proportions: narrowleaf cattail, reed canary grass, and prairie cordgrass. ATWSs 165 and 166 would be approximately 14 to 15 feet from wetland wrib016e and 40 feet from wrib017e, respectively. There would not be enough distance between these 2 wetlands to maintain the ATWS 50 feet from both wetlands. WBI Energy elected to position the workspace closer to wrib016e in the road ditch to maintain the ATWS further from the larger wetland wrib017e. WBI Energy's implementation of the construction and restoration measures of the FERC Procedures including the installation, maintenance, and monitoring of erosions and sediment controls would protect wetlands wrib016e and wrib017e.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		36.1	Locate ATS 167 in emergent wetland wrib019e.	ATWS is within wetland wrib019e	The ATWS north of the road would be needed for staging and spoil storage associated with the guided bore of 168th Avenue SE. The ATWS would be within emergent wetland wrib019e, which is dominated primarily by reed canary grass but includes lesser amounts (less than 10 percent cover) of goldenrod species, sandbar willow, peachleaf willow, and gray dogwood. The ATWS would be approximately 170 from the road but the wetland extends north from the road beyond the ATWS. To avoid having ATWS in this wetland, either the road bore, which would be about 270 feet long, would need to be extended or spoil from the road bore would need to be moved another approximately 600 feet further north. The first option would nearly triple the length of the bore. The second would require additional equipment traffic back and forth within the wetland to relay the bore spoil to the new ATWS outside of the wetland. Moving the ATWS north would also encroach on one of the few forested wetlands on the Project. Neither of these options would be practicable. Only 0.9 acre of the emergent wetland would be affected by the workspace (construction right-of-way and ATWS) for the bore and the wetland consists mostly (75 percent cover) of fast growing reed canary grass, which, along with the other existing species, would quickly recolonize any disturbed areas. WBI Energy would implement the FERC Procedures to protect and restore this wetland.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
VI.B.1.d	The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.	5.1	Access Road (AR) 005	Crosses wetland	New temporary AR005 crosses emergent wetland wcaa009e east of 165th Avenue SE. This wetland is covered almost entirely (98 percent cover) with reed canary grass. This wetland would be crossed to access the north side of the Burlington Northern Santa Fe Railroad bore at MP 5.1. As described in the appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Approximately 0.11 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing reed canary grass, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.
		9.9	AR 013	Crosses wetland	New temporary access road AR 013 would cross emergent wetland wcaa007e to allow equipment to access the workspace associated with the bore of wetland wcaa006e. This wetland is dominated by reed canary grass (95 percent cover) and narrowleaf cattail (5 percent cover). As described in appendix F, work on the new road may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.02 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would quickly recolonized with similar vegetation.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		13.7	AR 018	Crosses wetland	Existing/New temporary access road AR 018 would cross emergent wetland wacb003e, which is associated with a road ditch that runs along the east side of 166th Avenue SE on the south side of 44 Street SE. This wetland is dominated by needle spikerush, dark-green bulrush, narrowleaf cattail, and swamp smartweed. This wetland would be crossed to allow equipment to access the workspace associated with the 44th Street SE/right-of-way from the 166th Avenue SE road bore. As described in the appendix F, work on the new portion of the road and modifications to the existing portions may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.01 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		14.7	AR019	Crosses wetland	New temporary access road AR019 would cross emergent wetland wcab004e, which is associated with a road ditch that runs along the west side of 166th Avenue SE on the south side of 45th Street SE. This wetland is dominated by swamp smartweed, prairie cordgrass, redroot pigweed (red-root or common amaranth), narrowleaf cattail, and smaller amounts of needle spikerush. This wetland would be crossed to allow equipment to access the workspace associated with the 45th Street SE/right-of-way from 166th Avenue SE road bore right-of-way from 166th Avenue SE. As described in the appendix F, work on this access road may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.01 acre of this wetland would be within the temporary construction footprint of the road. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.
		31.3	AR034	Crosses wetland	Existing/New permanent access road AR034 would cross emergent wetland wria003e, which is in the road ditch on the north side of 58th Street SE. This wetland is dominated by needle spikerush, dark-green bullrush, reed canary grass, and narrowleaf cattail. WBI Energy would cross the wetland to access the Valve #4 site during construction and for later operation of the valve. As described in appendix F, work on the road may include grading, widening, and placement of mats, gravel, and/or culverts. Less than 0.01 acre of this wetland would be within the construction and permanent footprint of the road. WBI Energy would protect adjacent wetland areas through implementation of the FERC Procedures including the use of erosion and sediment controls. Following installation of the road, WBI Energy would remove any mats, culverts, or gravel that would not be needed for the permanent road and restore any portions of the wetland that were temporarily affected. Given that the wetland consists mostly of fast growing species, any temporarily impacted areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		34.5	AR038	Crosses wetland	New temporary access road AR038 would cross emergent wetland wrib021e, which is located in a field south of 61st SE. The predominant vegetation in this wetland is foxtail barley, goldenrod species, reed canary grass, and all other species constituting 10 percent cover or less. WBI Energy's crossing of this wetland would minimize equipment traffic crossing the wetland on the right-of-way and potentially minimize tree clearing. As described in appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Approximately 0.26 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.
		43.4	AR046	Crosses wetland	Existing temporary access road AR046 would cross emergent wetland wria010e, which is in a road ditch on the west side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail (60 percent cover) with lesser amounts of reed canary grass, perennial sow thistle, and yellow foxtail (each less than five percent cover). As described in appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		44.2	AR046.1	Crosses wetland	Existing temporary access road AR046.1 would cross emergent wetland wria014e, which is in a road ditch on the west side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail (80 percent cover) with lesser amounts of reed needle spikerush (about 10 percent cover). As described in appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.
		46.3	AR049	Crosses wetland	New temporary access road AR049 would cross emergent wetland wrid001e, which is in a road ditch on the east side of 172nd Avenue SE. This wetland is dominated by broadleaf cattail. As described in appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.

Appendix I

Proposed Modifications to the FERC Procedures for the Wahpeton Expansion Project

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	WBI Energy Justification for the Proposed Modification
		47.3	AR051	Crosses wetland	New temporary access road AR051 would cross emergent wetland wrid003e, which is in a road ditch on the east side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail and reed canary grass. As described in appendix F, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland would be within the temporary construction footprint of the road. WBI Energy would protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction, WBI Energy would restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel would be removed from the wetland and the preconstruction grade would be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that would be disturbed would be quickly recolonized with similar vegetation.

APPENDIX J

POTENTIAL CUMULATIVE IMPACTS

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
Meridian Grove 2nd Addition	Residential	Verity Homes plans to expand the Meridian Grove 2nd Addition Project subdivision project approximately 1.4 miles south of MP 1.9.	Under construction	Under construction	Unknown	Cass	1.0 mile north of MP 1.4	0	WW, WF, VG, SO	Mapleton, North Dakota, 2021
Asmoor Glen	Residential	Beyond Reality plans to expand the Asmoor Glen subdivision along the Maple River Golf Course approximately 1.5 miles south of MP 1.0.	Under construction	Under construction	Unknown	Cass	1.5 miles south of MP 1.0	0	WW, WF, VG, SO	Mapleton, North Dakota, 2021
Flickertail Solar Project	Energy	Savion is developing a 350-megawatt solar project that will provide power to approximately 100,000 homes near Colfax, North Dakota. The project will take place on a 3,000-acre site in an upside down horseshoe shape to the east, north, and west of the city of Colfax, North Dakota. Construction of the project is expected to last 9 months and is expected to create hundreds of jobs during construction and 2 to 3 permanent jobs once construction is complete. The project will also create tax benefits for Richland County.	Permit obtained	2022	2024	Richland	Likely 0.8 mile north of MP 39.7 (Exact location unknown)	0	WW, WF, VG, SO	Wahpeton Daily News, 2020

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
Harmony Solar Project	Energy	National Grid Renewables (formerly Geronimo Energy) is planning to spend $320 million on the Harmony Solar Project, a 200-megawatt system located near Fargo, in Harmony Township. State and local officials approved the project in 2019; however, the project has not started construction as of June 2022.	Permit obtained	Unknown	Unknown	Cass	2.8 miles south of MP 0.3	0	SO	Grand Forks Herald, 2018
NuStar Pipeline Operating Partnership Pipeline Relocation Project	Energy	NuStar Pipeline Operating Partnership L.P. (NuStar) is proposing to relocate the portion of NuStar's existing North System Pipeline that will be impacted by construction of the Fargo-Moorhead Diversion Channel. The project will involve installation of approximately 2.21 miles of 10-inch inside diameter steel pipeline.	Permit obtained	Unknown; but prior to the Fargo-Moorhead Diversion Channel construction in the region	Unknown	Cass	0.2 miles west of MP 6.1	0	WW, VG, WF, SO, LU, RS, AQ-con	North Dakota Public Service Commission, 2020

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
MDU Distribution System for Kindred	Energy	MDU will build a new nonjurisdictional distribution system (12,000 ft of 6-inch diameter polyethylene [PE] pipeline; 3,500 ft of 4-inch diameter PE pipeline; and 17,500 ft of 2-inch diameter PE pipeline) to provide natural gas to industrial and residential customers in Kindred that want to convert from propane to natural gas service.	Planned	2024	2024 after construction of the Wahpeton Expansion Project	Cass and Richland	Will connect with the Wahpeton Expansion Project facilities at the MDU-Kindred Border Station and extend west to customers in Kindred	1.0	WW, VG, WF, CR, SO, GS, LU, RS, N-con, AQ-con	WBI Energy
MDU Distribution System for Wahpeton	Energy	MDU will build an incremental nonjurisdictional distribution line (1.5 miles of 10-inch diameter steel pipeline) to connect the new MDU—Wahpeton Border Station to customers in Wahpeton.	Planned	2024	2024 after construction of the Wahpeton Expansion Project	Cass and Richland	Will connect with the Wahpeton Expansion Project facilities at the MDU-Wahpeton Border Station and extend east to customers in Wahpeton	1.0	WW, VG, WF, CR, SO, GS, LU, RS, N-con, AQ-con	WBI Energy
MDU Distribution - Farm Tap Service	Energy	If WBI Energy builds farm taps off the mainline, MDU could run nonjurisdictional service lines to potential landowners for grain dryers, workshops, and residences. The number and type of service has still not been determined.	Unknown	Unknown; likely 2024	Unknown; likely 2024 after construction of the Wahpeton Expansion Project	Cass and Richland	Facilities would connect to as yet to be determined farm taps along Wahpeton Expansion Project right-of-way	1.0, various locations	WW, VG, WF, CR, SO, GS, LU, RS, N-con, AQ-con	WBI Energy

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
Fargo-Moorhead Area Diversion Project	Utilities (Non Energy)	This USACE Flood Risk Management Project is a 20,000-cubic foot per second diversion channel in North Dakota with upstream staging.	Under construction	2017	2027	Cass and Richland	At its closest point 1.3 miles west of MP 5.2	0	WW, WF, VG, SO	Metro Flood Diversion Authority, 2022
Power lines	Utilities (Non Energy)	Power lines will need to be built to serve the nonjurisdictional facilities.	Planned	2024	2024 after construction the Wahpeton Expansion Project	Cass and Richland	Unknown but a portion of the power lines could be adjacent to the proposed MDU-Kindred and MDU-Wahpeton border stations	<0.5	WW, VG, WF, CR, SO, GS, LU, RS, VS, AQ-con	WBI Energy
Kindred Airport Runway Expansion	Transportation	The Kindred Airport has plans to expand the runway and departure surface to cross 53rd Street and 166th street.	Expansion plans have been developed	First expansion - 2027; Future expansion - unknown	First expansion - 2029; Future expansion - Unknown	Cass	0.4 miles east of MP 23.3	0	WW, VG, WF, SO, LU, RS	WBI Energy
Ongoing agricultural Activity	Other	The majority of lands crossed by the project are existing agricultural fields. The agricultural activity is expected to continue in this area for the life of the project.	Past, present, future	Not Applicable	Ongoing	Cass and Richland	Entire Project	702.2	WW, VG, WF, CR, SO, GS, LU, RS, VS, N-op, N-con, AQ-con	N/A

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
New unnamed pipeline	Energy	The North Dakota Legislature approved $150 million appropriation from federal pandemic relief funds to support construction of a major natural gas pipeline project to capture gas from western North Dakota and transport it to eastern North Dakota. The additional natural gas takeaway capacity is needed soon or oil producers will be forced to constrain production to avoid flaring the associated natural gas.	Unknown	Unknown	Unknown	Cass (and many other counties)	Information Not Available	0	SO	Western Dakota Energy Association, 2021
NDDOT 1	Transportation	NDDOT structure repair project on I-29 southbound bridge at the Wild Rice River.	Complete	April 2021	July 2021	Cass	7.5 miles west of MP 18.1	0	SO	North Dakota Department of Transporta-tion (NDDOT), 2021a
NDDOT 2	Transportation	NDDOT project including spall repair, joint repair, Concrete Pavement Repair (CPR), and deck repair on I-94, 9th St, 45th St, and I-29 interchange.	Complete	2021	2021	Cass	6.2 miles west of MP 10.7	0	SO	NDDOT, 2021a

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 3	Transportation	NDDOT project including grading, Plain Cement Concrete, bridge, and bike path work on 64th Ave S and 38th St S to 33rd St S in Fargo.	Under construction	Spring 2021	Fall 2022	Cass	7.1 miles west of MP 12.1	0	SO	NDDOT, 2021a
NDDOT 4	Transportation	NDDOT paving on I-29, Northbound, 3.8 miles south of Grandin to 1.2 miles north of ND 200.	Unable to confirm construction schedule.	Unknown	Unknown	Cass	19.3 miles south of MP 0	0	SO	NDDOT, 2021a
NDDOT 5	Transportation	NDDOT project involving mill and overlay on Hwy 38 from JCT I-94 North to Page.	Upcoming; went to bid in December 2021	2022	2022	Cass	23.4 miles east of MP 0.4	0	SO	NDDOT, 2021a
NDDOT 6	Transportation	NDDOT project involving intersection turn lane improvements on I-29 /38th St. Intersection.	Complete	May 2021	October 2021	Cass	7.0 miles west of MP 10.8	0	SO	NDDOT, 2021a
NDDOT 7	Transportation	NDDOT CPR on I-29 from Main Ave to Co 20 north and southbound lanes.	Complete	2021	2021	Cass	7.8 miles west of MP 5.2	0	SO	NDDOT, 2021a
NDDOT 8	Transportation	NDDOT chip seal on I-29 near South Dakota border (SD line to RP 11, 11.3 Miles).	Bid opens February 2022	2022	Unknown	Richland	23.3 miles north of MP 60.5	0	SO	NDDOT, 2021a
NDDOT 9	Transportation	NDDOT construction of the I-94 Raymond Interchange.	Complete	July 2021	September 2021	Cass	0.0 miles Crosses the project at MP 6.0	0.25	WW, VG, WF, CR, SO, GS, LU, RS, AQ-con	NDDOT, 2021a

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 10	Transportation	NDDOT project involving mill and overlay on Highway 10 Junction 18 Casselton to Mapleton.	Complete	2020	Unknown	Cass	Crosses the project at MP 0.7	1.0	WW, VG, WF, CR, SO, GS, LU, RS, VS, N-con, AQ-con	NDDOT, 2021a
NDDOT 11	Transportation	NDDOT deck overlay on 12th Avenue North in Fargo.	Complete	2020	August 2020	Cass	7.3 miles west of MP 5.1	0	SO	NDDOT, 2021a
NDDOT 12	Transportation	NDDOT concrete median barrier on I-29 south of 17th Avenue South in Fargo.	Complete	June 2020	October 2020	Cass	7.2 miles west of MP 10.7	0	SO	NDDOT, 2021a
NDDOT 13	Transportation	NDDOT deck Overlay on the Wild Rice River structure at RP 14.58 North Bound Roadway, Deck Replacement Exit 15 (Great Bend Interchange), and Deck Overlay on the BNSF Separation (RP 33.013) South Bound Roadway.	Complete	2020	2020	Richland	7.6 miles west of MP 18.1	0	SO	NDDOT, 2021a
NDDOT 14	Transportation	NDDOT Concrete pavement repair and chip sealing on ND 13 from I-29 to Wahpeton.	Complete	2020	2020	Richland	4.4 miles north of MP 60.5	0	WW, VG, WF, SO, LU, RS,	NDDOT, 2021b
NDDOT 15	Transportation	NDDOT Project on Highway 13 E, Junction 13E to Junction 127 thin overlay.	Upcoming	2022	Unknown	Richland	4.4 miles north of MP 60.5	0	WW, VG, WF, SO, LU, RS,	NDDOT, 2021b
NDDOT 16	Transportation	NDDOT project on Highway 18N, 0.8 mile of curb ramps from 7th Street to 3rd Street in Casselton.	Upcoming	2022	Unknown	Cass	7.1 miles east of MP 1	0	SO	NDDOT, 2021b

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 17	Transportation	NDDOT project on Hwy 29 12.6 miles Major Rehabilitation, Hunter to Near Blanchard.	Upcoming	2022	Unknown	Cass, Trail	20.9 miles southeast of MP 0.3	0	SO	NDDOT 2021b
NDDOT 18	Transportation	NDDOT project involving about 8 miles of preventative maintenance on Highway 94 between west of Wheatland to east of Cassleton.	Upcoming	2022	Unknown	Cass	4.8 miles northeast of MP 1	0	SO	NDDOT, 2021b
NDDOT 19	Transportation	NDDOT project involving 10.9 miles of preventative maintenance on Highway 94 between east Casselton to near West Fargo.	Upcoming	2022	Unknown	Cass	Crosses the project at MP 5.9	1.0	WW, VG, WF, CR, SO, GS, LU, RS, N-con, AQ-con	NDDOT, 2021b
NDDOT 20	Transportation	NDDOT project involving 2.9 miles of minor road rehabilitation on Highway 210 from Highway 13 to Red River.	Upcoming	2022	Unknown	Richland	3.1 miles northwest of MP 60.5	0	WW, VG, WF, SO, LU, RS,	NDDOT, 2021b
NDDOT 21	Transportation	NDDOT Bridge Repair, Highway 11, East of Fairmount.	Upcoming	2022	Unknown	Richland	19.6 miles north of MP 60.5	0	SO	NDDOT, 2021b
NDDOT 22	Transportation	NDDOT project involving 11.3 miles minor rehabilitation on I 29, state line to Junction 13.	Upcoming	2022	Unknown	Richland	8.6 miles northeast of MP 57.5	0	SO	NDDOT, 2021b
NDDOT 23	Transportation	NDDOT project involving 10.9 miles of structural overlay work on I-29 north of junction with Hwy 13.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	0.5 miles east of MP 46.5	0	WW, VG, WF, SO, LU, RS, N-op, N-con, AQ-con	NDDOT, 2021b

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 24	Transportation	NDDOT project involving I-94 Road improvements from I-29 to 25th Street interchange.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.3 miles west of MP 10.7	0	SO	NDDOT, 2021b
NDDOT 25	Transportation	NDDOT project involving 2.9 miles of Road Improvements on East Wahpeton Bypass, Highway 210.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	3.1 miles northwest of MP 60.5	0	WW, VG, WF, SO, LU, RS,	NDDOT, 2021b
NDDOT 26	Transportation	NDDOT project involving 2.7 miles of County Road 10 Improvements, Lynchburg Interstate to ND 18 S Casselton.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.5 miles east of MP 0.8	0	SO	NDDOT, 2021b
NDDOT 27	Transportation	NDDOT project involving 25.0 miles of thin overlay (preventative maintenance) on I-18 N.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	7.3 miles east of MP 21.8	0	SO	NDDOT, 2021b
NDDOT 28	Transportation	NDDOT project involving 19.2 miles of preventative maintenance on I-18 N from Junction 46 to Casselton.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	7.0 miles east of MP 1	0	SO	NDDOT, 2021b
NDDOT 29	Transportation	NDDOT project involving I-29 NE Ramp preventative maintenance at 13th Avenue NE Ramp.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.7 miles southwest of MP 10.7	0	SO	NDDOT, 2021b
NDDOT 30	Transportation	NDDOT project involving 4.9 miles I-94 Road Repairs 1 mile west of 45th to Red River.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	5.8 miles southwest of MP 10.7	0	SO	NDDOT, 2021b

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 31	Transportation	NDDOT project involving 1.9 miles of lift station and storm sewer repairs on I-94, 25th Street to Red River.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	8.3 miles west of MP 10.7	0	SO	NDDOT, 2021b
NDDOT 32	Transportation	NDDOT project involving 12.7 miles of preventative maintenance on I-11 from Ligerwood to Hankinson.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	21.3 miles northeast of MP 57.5	0	SO	NDDOT, 2021b
NDDOT 33	Transportation	NDDOT project involving 3.5 miles of preventative maintenance on I-11 from Hankinson to I-29.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	20.9 miles north of MP 57.5	0	SO	NDDOT, 2021b
NDDOT 34	Transportation	NDDOT project involving 13.0 miles of preventative maintenance on I-11 from I- 29 to State Line.	Upcoming	Between 2023-2025	Between 2023-2025	Richland	19.1 miles north of MP 60.5	0	SO	NDDOT, 2021b
NDDOT 35	Transportation	NDDOT project involving 12.1 miles of preventative maintenance on I-29 from Wild Rice River to N Main.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.1 miles west of MP 10.8	0	SO	NDDOT, 2021b
NDDOT 36	Transportation	NDDOT project involving Ramp Revisions on I-29 64th Avenue South Interchange.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.2 miles west of MP 12.1	0	SO	NDDOT, 2021b
NDDOT 37	Transportation	NDDOT project involving 9.0 miles of preventative maintenance on I-94 from E Buffalo to Wheatland.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	13.6 miles east of MP 1	0	SO	NDDOT, 2021b

APPENDIX J

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Wahpeton Expansion Project [a]

Project Name	Category	Project Description	Status	Construction Commences	Operation Commences	County (ies)	Location relative to Project	Approximate Acres of Overlap	Resources with Potential for Cumulative Impacts	Citation
NDDOT 38	Transportation	NDDOT project involving 1.0 mile of Road Reconstruction, Main Avenue from University to 25th Street.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	8.8 miles west of MP 5.2	0	SO	NDDOT, 2021b
NDDOT 39	Transportation	NDDOT project involving ongoing road and bridge maintenance in West Fargo and Fargo.	Upcoming	Between 2023-2025	Between 2023-2025	Cass	7.9 miles southwest of MP 10.7	0	SO	NDDOT, 2021b
NDDOT 40	Transportation	Cass County Highway 15 Replacement and Improvement Project involving bridge Replacement & Incidentals between sections 8/9 Mapleton Township on Cass County Highway 15 between Section 8 and 9.	Upcoming	April 2022– July 2022/ August 2022	April 2022– July 2022/ August 2022	Cass	75 feet southeast of MP 6.6	0	SO	Cass County 2022

AQ-con = air quality (construction); AQ-op = air quality (operations); CR = cultural resources; GS = geology and soils; LU = land use; N/A = Not available; N-con = noise (construction); N-op = noise (operation); RS = recreation and special interest areas; SO = socioeconomics; TE = threatened and endangered species; VG = vegetation; VS = visual resources; WF = wildlife, fish; WW = wetlands, water resources

[a] A description of the geographic scope of the analysis for each resource is provided in table 4.11-1.

APPENDIX K

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Cardno, now Stantec, Inc. is a third party contractor assisting the Commission staff in reviewing the environmental aspects of the project application and preparing the environmental documents required by NEPA. Third party contractors are selected by Commission staff and funded by project applicants. Per the procedures in 40 CFR 1506.5(b)(4), third party contractors execute a disclosure statement specifying whether any financial or other interests in the outcome of the project exist. In accordance with Commission policies, these statements are reviewed to ensure no financial or other organizational conflicts of interest exist. Third party contractors are required to self-report any changes in financial situation and to refresh their disclosure statements annually. The Commission staff solely directs the scope, content, quality, and schedule of the contractor's work. The Commission staff independently evaluates the results of the third-party contractor's work and the Commission, through its staff, bears ultimate responsibility for full compliance with the requirements of NEPA.

APPENDIX L

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