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September 11, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Re: WBI Energy Transmission, Inc.
North Bakken Expansion Project, Supplemental Filing
Docket No. CP20-52-000
Docket No. CP20-52-001

Dear Ms. Bose:

WBI Energy Transmission, Inc. (WBI Energy), herewith submits a supplemental filing in the above referenced dockets to assist Federal Energy Regulatory Commission (Commission) staff in the preparation of the environmental assessment for the North Bakken Expansion Project (Project).

The filing includes the following volumes, as applicable:

Volume I – No supplemental information will be provided as Volume I.

Volume II – Consists of updates to Exhibit F-I, Environmental Report, and includes updated text and tables to Resource Reports 1 to 10 to incorporate minor Project reroutes, among other updates, along with the following Appendices, with the exception of the Appendices described below in Volume IV. The information contained in Volume II is public.

- Appendix 1A, Project Route Maps (Topographic)
- Appendix 1B, Aerial Photo-based Alignment Sheets Mapping Supplement
- Appendix 1D, Summary of Collocated Facilities
- Appendix 1E, Plot Plan for the Northern Border Interconnect
- Appendix 1F-1, Revised Spill Prevention, Control, and Countermeasure Plan
- Appendix 1F-3, Revised Noxious Weeds Management Plan
- Appendix 1F-6, Plan for Unanticipated Discovery of Historic Properties or Human Remains during Construction
- Appendix 1F-7, Plan for Unanticipated Discovery of Paleontological Resources during Construction
- Appendix 1F-8, Revised Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plans

- Appendix 1J, Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the North Bakken Expansion Project
- Appendix 2A, Revised Wetland/Waterbody Delineation Report
- Appendix 2B, Wetlands Crossed or Otherwise Affected by the Project
- Appendix 4B Archaeological Sites Identified during the Class III Inventory
- Appendix 4C Historic Structures Identified during the Class III Inventory
- Appendix 4D Class III Historic Structures Addendum Report
- Appendix 4F Summary of Communications with Federally Recognized Indian Tribes
- Appendix 4G Tribal Participation in 2020 Fieldwork by Site
- Appendix 6A, Summary of Oil and Gas Wells within 0.25 Mile of the Proposed Project
- Appendix 6B, Paleontological Assessment for the North Bakken Expansion Project, North Dakota
- Appendix 7A, Characteristics of Soil Map Units at the Proposed Project Facilities
- Appendix 7B, Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area
- Appendix 8A, Additional Temporary Workspace
- Appendix 8B, Access Roads
- Appendix 8C, Road and Railroad Crossings

Volume III - No supplemental information will be provided as Volume III.

Volume IV - Consists of updates to Resource Report 1, Appendix 1H, Landowner and Stakeholder Lists and Appendix 1H-A, Landowner Letter and Correspondence; Resource Report 3, Appendix 3A, Biological Assessment and Appendix 3B, Biological Evaluation; and Resource Report 4, Appendices 4A-1 and 4A-2, Class III Archaeology Reports and Aerial Maps and Appendix 4E, Geomorphology Assessment Report. Pursuant to 18 CFR §388.112, and consistent with the Commission's precedent, and other applicable regulations with respect to sensitive information, WBI Energy requests privileged and confidential treatment of this information, which is labeled: "CUI//PRIV – DO NOT RELEASE."

Pursuant to the Commission's guidelines for eFiling,¹ WBI Energy is hereby eFiling the supplemental information and will provide two complete copies of the information to the Office of Energy Projects (OEP) Room 62-46 and one complete copy to the Office of General Council – Energy Projects (OGC-EP) Room 101-56.

Pursuant to 18 CFR § 385.2010 of the Commission's regulations, copies of this filing are being served to each person whose name appears on the official service list for this proceeding.

¹ Federal Energy Regulatory Commission Filing Guide/Qualified Documents List (February 14, 2017).

Should you have any questions or comments regarding this filing, please call the undersigned at (701) 530-1563.

Sincerely,

/s/ Lori Myerchin

Lori Myerchin
Director, Regulatory Affairs and
Transportation Services

Attachments

Courtesy Copies:

Dawn Ramsey, FERC Environmental Project Manager (via email)
Shannon Crosley, FERC Environmental Deputy Project Manager (via email)
Official Service List
OEP Room 62-46 (2 copies)
OGC-EP Room 101-56 (1 copy)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 11th day of September 2020.

By /s/ Lori Myerchin

Lori Myerchin
Director, Regulatory Affairs
and Transportation Services
WBI Energy Transmission, Inc.
1250 West Century Avenue
Bismarck, ND 58503
Telephone: (701) 530-1563

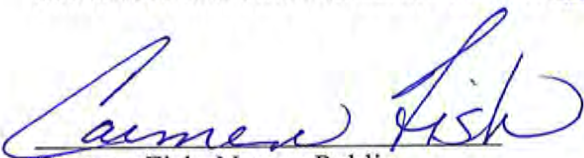
STATE OF NORTH DAKOTA)
COUNTY OF BURLEIGH)

I, Lori Myerchin, being first duly sworn, do hereby depose and say that I am the Director, Regulatory Affairs and Transportation Services for WBI Energy Transmission, Inc.; that I have read the foregoing document; that I know the contents thereof; that I am authorized to execute such document; and that all such statements and matters set forth therein are true and correct to the best of my knowledge, information and belief.

Dated this 11 day of September, 2020.

By 
Lori Myerchin
Director, Regulatory Affairs
and Transportation Services

Subscribed and sworn to before me this 11th day of September, 2020.


Carmen Fish, Notary Public
Burleigh County, North Dakota
My Commission Expires: 01/03/2024

CARMEN FISH
Notary Public
State of North Dakota
My Commission Expires January 3, 2024

WBI Energy Transmission, Inc.
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Supplemental Filing – Project Reroute Updates to Resource Report Information and
Associated Environmental Assessment Sections

WBI Energy Transmission, Inc. (WBI Energy) has incorporated several minor reroutes into the North Bakken Expansion Project pipeline routes, added two new staging areas, updated access roads as needed based on route changes and engineering refinement, and updated workspaces associated with the Northern Border Interconnect, Elkhorn Creek Compressor Station, Tioga Compressor Station, and block valves. The minor reroutes were made to avoid environmental or cultural resources or to address landowner and/or engineering concerns (see section 10.6.3 for a list of minor route variations incorporated into the proposed route). Revised maps are included in Attachment 1A and revised alignment sheets are provided in Attachment 1B. This information also serves as WBI Energy’s response to request no. 2 of FERC’s July 13, 2020 environmental information request.

Table 1 below summarizes the resulting changes to information provided in the final resource reports included with WBI Energy’s February 14, 2020 application. Replacement text for these resource report sections, any revised tables/appendices, and references to the corresponding section of the draft applicant-prepared environmental assessment are provided below or as attachments to this supplemental filing.

TABLE 1			
North Bakken Expansion Project			
Summary of Changes to Project Information Associated with Minor Reroutes/Project Updates			
Resource Report No./Affected Sections, Tables, Figures, or Appendices	Corresponding Applicant-Prepared Environmental Assessment Sections, Tables, Figures, or Appendices		Where Addressed in this Supplemental Filing
RESOURCE REPORT 1			
Section 1.0, General Project Description (text)	Section A.1, Introduction		Section 1.0
Section 1.1.1, Purpose and Need (text)	Section A.2, Purpose and Need		Section 1.1.1
Section 1.1.2, Location and Description of Project Facilities (text)	Section A.4, Proposed Facilities		Section 1.1.2.
Section 1.1.3, Land Requirements (text)	Section A.5, Land Requirements		Section 1.1.3
Section 1.2, Construction Schedule and Workforce (text)	Section A.6, Construction Schedule and Workforce		Section 1.2
Section 1.3.1.2, Clearing and Grading (text)	Section A.7.1, General Pipeline Construction Procedures		Section 1.3.1.2
Section 1.7, Non-jurisdictional Facilities	Section A.8, Non-jurisdictional Facilities		Section 1.7
Section 1.9, Affected Landowners and Other Stakeholders (text)	Not Applicable		Section 1.9
Table 1.1.2-1, Proposed Pipeline Facilities (text)	Table A-1, Proposed Pipeline Facilities		Table 1.1.2-1
Table 1.1.2-2, Proposed New and Modified Compressor Stations	Table A-2, Proposed New and Modified Aboveground Facilities		Table 1.1.2-2
Table 1.1.2-3, Proposed New and Modified Delivery, Receipt, and Transfer Stations	(See Table A-2 above)		Table 1.1.2-3
Table 1.3-1, Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan and Wetland and Waterbody Construction and Mitigation Procedures	Table A-4, Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan and Wetland and Waterbody Construction and Mitigation Procedures		Table 1.3-1
Section 1.7, Non-jurisdictional Facilities	Section A.8, Non-jurisdictional Facilities		Section 1.7
Table 1.8-1, Environmental Permits, Approvals, and Consultations	Table A-6, Environmental Permits, Approvals, and Consultations		Table 1.8-1
Figure 1.1-1, Project Overview Map	Figure 1, Project Overview Map		Figure 1.1-1

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Figure 1.10-1, Reasonably Foreseeable Future Actions	Figure 3, Reasonably Foreseeable Future Actions	Figure 1.10-1	
Appendix 1A, Project Route Maps (Topographic)	Appendix A	Appendix 1A	
Appendix 1B, Aerial Photo-based Alignment Sheets Mapping Supplement	Not Applicable	Appendix 1B	
Appendix 1D, Summary of Collocated Facilities	Appendix B, Summary of Collocated Facilities	Appendix 1D	
Appendix 1E, Plot Plans for Aboveground Facility Sites. Revised Plot Plan for the Northern Border Interconnect	Not Applicable	Appendix 1E -	
Appendix 1F-1, Revised Spill Prevention, Control, and Countermeasure Plan	Not Applicable	Appendix 1F-1	
Appendix 1F-3, Revised Noxious Weeds Management Plan	Not Applicable	Appendix 1F-3	
Appendix 1F-6, Plan for Unanticipated Discovery of Historic Properties or Human Remains during Construction	Not Applicable	Appendix 1F-6	
Appendix 1F-7, Plan for Unanticipated Discovery of Paleontological Resources during Construction	Not Applicable	Appendix 1F-7	
Appendix 1F-8, Revised Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plans	Not Applicable	Appendix 1F-8	
Appendix 1H – Landowner List and Stakeholder List (filed under separate cover as CUI//PRIV)	Not Applicable	Appendix 1H – Updated Landowner List and Stakeholder List (Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV] in Volume IV)	
Not Applicable	Not Applicable	Appendix 1H-A – Correspondence Record with New Landowners Along Tioga West and Tioga East Alternatives (filed under separate cover as CUI//PRIV in Volume IV)	
Appendix 1J, Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the North Bakken Expansion Project	Appendix M, Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the North Bakken Expansion Project	Appendix 1J	
RESOURCE REPORT 2			
Section 2.1, Groundwater Resources (text) (Sections 2.1.1.2, 2.1.3, 2.1.4, 2.1.5)	Section B.2.1, Groundwater Resources	Section 2.1	
Section 2.2, Surface Water Resources (text) (Sections 2.2.1, 2.2.2, 2.2.4, 2.2.7.1, 2.2.7.2)	Section B.2.2, Surface Water Resources	Section 2.2	
Section 2.3, Wetlands (text) (Sections 2.3.1, 2.3.2, 2.3.4)	Section B.2.3, Wetlands	Section 2.3	

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TABLE 1			
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Resource Report No./Affected Sections, Tables, Figures, or Appendices	Corresponding Applicant-Prepared Environmental Assessment Sections, Tables, Figures, or Appendices	Where Addressed in this Supplemental Filing	
Section 2.4, Cumulative Impacts (text) (Section 2.4.3)	Section B.10	Section 2.4	
Table 2.1.1-1, Areas Underlain by Regional Aquifers	Table B-5, Areas Underlain by Unconsolidated Glacial Aquifers	Table 2.1.1-1	
N/A	N/A	Table 2.2.1-1 – HUC-12 Summary Table Requested by FERC in 6-22-20 Data Request	
Table 2.2.1-1, Waterbodies Crossed by the Pipeline Routes	Table B-6, Waterbodies Crossed by the Pipeline Routes	Table 2.2.1-2	
Table 2.2.4-1, Estimated Construction Water Volume Requirements	Table B-7, Estimated Construction Water Volume Requirements	Table 2.2.4-1	
Table 2.3.1-1, Wetland Types Crossed by the Pipeline Routes	Not Applicable	Table 2.3.1-1	
Table 2.3.2-1, U.S. Fish and Wildlife Service Wetland Easements Crossed by the Pipeline Routes	Table B-8, U.S. Fish and Wildlife Service Wetland Easements Crossed by the Pipeline Routes	Table 2.3.2-1	
Figure 2.1.1-1, Regional Aquifers	Not Applicable	Figure 2.1.1-1	
Appendix 2A, Revised Wetland/Waterbody Delineation Report	Not Applicable	Appendix 2A	
Appendix 2B, Wetlands Crossed or Otherwise Affected by the Project	Appendix I, Wetlands Crossed or Otherwise Affected by the Project	Appendix 2B	
RESOURCE REPORT 3			
Section 3.1, Fisheries and Other Aquatic Resources (text) (Sections 3.1, 3.1.1, 3.1.3)	Section B.3.2, Fisheries	Section 3.1	
Section 3.2, Wildlife Resources (text) (Sections 3.2.1.1, 3.2.1.2, 3.2.1.3, 3.2.1.4, 3.2.1.5, 3.2.2, 3.2.3.1, 3.2.3.2)	Section B.3.3, Wildlife	Section 3.2	
Section 3.4, Bald Eagle and Golden Eagle Protection Act (text)	Section B.3.3, Wildlife	Section 3.4	
Section 3.5, Vegetation Resources (text) (Sections 3.5.1, 3.5.1.3, 3.5.2, 3.5.3, 3.5.4)	Section B.3.1, Vegetation	Section 3.5	
Section 3.6, Endangered and Threatened Species (text) (Sections 3.6.1, 3.6.1.3, 3.6.1.4, 3.6.2.3, 3.6.2.4, 3.6.2.7)	Section B.4, Threatened, Endangered, and Other Special Status Species	Section 3.6	
Section 3.7, Cumulative Impacts (text) (Sections 3.7.1.2, 3.7.1.3, 3.7.1.4)	Section B.10.3 – Potential Cumulative Impacts by Resource	Section 3.7	
Section 3.8, References (new or updated only)	Section E	Section 3.8	
Table 3.2.2-2, U.S. Fish and Wildlife Service Waterfowl Production Areas that May Be Crossed by the Project	N/A	Table 3.2.2-2	
Table 3.5.1-1, Vegetation Types Affected by Construction and Operation of the Project (acres)	Table B-9, Vegetation Types Affected by Construction and Operation of the Project (acres)	Table 3.5.1-1	
Table 3.5.1-2, Pipeline Facility Crossings of Native Prairie	Not Applicable	Table 3.5.1-2	

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Table 3.5.4-2, Summary of Noxious Weeds Observed in the Project Area Suring Surveys	Not Applicable	Table 3.5.4-2
Table 3.6.1-1, Federally Listed Species in the Project Area	Table B-12 - Federally Listed Species in the Project Area	Table 3.6.1-1
Appendix 3A, Biological Assessment (filed under separate cover as CUI//PRIV)	Not Applicable	Appendix 3A (filed under separate cover as CUI//PRIV in Volume IV)
Appendix 3B, Biological Evaluation (filed under separate cover as CUI//PRIV)	Not Applicable	Appendix 3B (filed under separate cover as CUI//PRIV in Volume IV)
RESOURCE REPORT 4		
Section 4.1, Area of Potential Effects (text)	Section B.7.1, Area of Potential Effects	Section 4.1
Section 4.2, Background Research (text)	Section B.7.3, Overview and Inventory Results	Section 4.2
Section 4.3, Area Surveyed (text) (Sections 4.3.1, 4.3.2, 4.3.3)	Section B.7.3, Overview and Inventory Results	Section 4.3
Section 4.4, Results of Survey (text) (Sections 4.4.1.1, 4.4.1.2, 4.4.1.3, 4.4.2 [new section - Geomorphology], 4.4.2 [original section 4.4.2 - Historic Structures], 4.4.3)	Section B.7.3, Overview and Inventory Results	Section 4.4 Note: Section 4.4.2 (Historic Structures) in the February 14, 2020 FERC Application is now section 4.4.3 and what was 4.4.3 (Other Resources) is now Section 4.4.4 (Cemetery)
Section 4.5, Schedule for Completing Outstanding Studies (text)	Section B.7.3, Overview and Inventory Results	Section 4.5
Section 4.6, Status of Consultations and Communications (text) (Sections 4.6.1.1, 4.6.1.2, 4.6.2, 4.6.3, 4.6.3.1 [new section, Tribal Participation in Field Surveys])	Section B.7.2, Cultural Resources Investigations	Section 4.6
Section 4.7, Unanticipated Discovery Plans (text)	Section B.7.4, Unanticipated Discovery Plan	Section 4.7
Section 4.8, Cumulative Impacts (text)	Section B.10.3 – Potential Cumulative Impacts by Resource	Section 4.8
Table 4.2-1, Previously Recorded Sites in the Archaeological Survey Corridor	Not Applicable	Table 4.2-1
Table 4.2-2, Previously Recorded sites in the Historic Structures Survey Corridor	Not Applicable	Table 4.2-2
Table 4.3.1-1, Archaeological Survey Status	Not Applicable	Table 4.3.1-1
Table 4.3.2-1, Historic Structures Survey Status	Not Applicable	Table 4.3.3-1
Table 4.6.1-1, Summary of Communications with the U.S. Army Corps of Engineers	Not Applicable	Table 4.6.1-1
Table 4.6.1-2, Summary of Commutations with the U.S. Forest Service	Not Applicable	Table 4.6.1-2
Table 4.6.2-1, Summary of Communications with the State Historical Society of North Dakota	Not Applicable	Table 4.6.2-1

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Resource Report No./Affected Sections, Tables, Figures, or Appendices	Corresponding Applicant-Prepared Environmental Assessment Sections, Tables, Figures, or Appendices	Where Addressed in this Supplemental Filing
Appendix 4A-1, Class III Archaeology Report for Private and State Lands (filed under separate cover as CUI//PRIV in Volume IV)	Not Applicable	Appendix 4A-1 (filed under separate cover as CUI//PRIV in Volume IV)
Appendix 4A-2, Class III Archaeology Report for Federal Lands Managed by the U.S. Forest Service (filed under separate cover as CUI//PRIV in Volume IV)	Not Applicable	Appendix 4A-2 (filed under separate cover as CUI//PRIV in Volume IV)
Appendix 4B, Archaeological Sites Identified during the Class III Inventory	Table B-19 – Archaeological Sites Identified During the Class III Survey	Appendix 4B
Appendix 4D, Historic Structures Identified during the Class III Inventory	Table B-20 – Architectural sites Identified During the Class III Survey	Appendix 4C
Appendix 4E, Class III Historic Structures Report	Not Applicable	Appendix 4D, Class III Historic Structures Addendum Report
Not Applicable	Not Applicable	Appendix 4E – Geomorphology Assessment Report (filed under separate cover as CUI//PRIV in Volume IV)
Appendix 4G, Summary of Communications with Federally Recognized Indian Tribes	Not Applicable	Appendix 4F
Not Applicable	Not Applicable	Appendix 4G – Tribal Participation in 2020 Fieldwork by Site
RESOURCE REPORT 5		
Section 5.2, Socioeconomic Impact Analysis and Mitigation (text) (Sections 5.2.1, 5.2.2, 5.2.6, 5.2.7)	Sections B.6.1 (Population), B.6.2 (Employment), B.6.3 (Transportation), B.6.7 (Economy and Tax Revenue)	Section 5.2
Section 5.3, Environmental Justice (text) (Section 5.3.1)	Section B.6.10, Environmental Justice	Section 5.3
Table 5.2.7-1, Estimated Daily Vehicle Traffic	Table B-16, Estimated Daily Vehicle Traffic	Table 5.2.7-1
RESOURCE REPORT 6		
Section 6.1, Geological Setting (text)	Section B.1.1	Section 6.1
Section 6.2, Physiographic Setting and Topography (text)	Section B.1.1	Section 6.2
Section 6.3, Mineral Resources (text)	Section B.1.1	Section 6.3
Section 6.4 Geologic Hazards (text) (Sections 6.4.1, 6.4.3, 6.4.4)	Section B.1.1	Section 6.4
Section 6.5, Paleontological Resources (text)	Section B.1.1	Section 6.5
Section 6.6, Blasting (text)	Not Applicable	Section 6.6
Section 6.7, Design, Construction, and Mitigation (text)	Section B.1.1	Section 6.7
Section 6.8, References (new or updated only)	Section E	Section 6.8
Not Applicable	Table B-1, Surficial Geology Crossed by the Project	Table 6.1-1, Surficial Geology Crossed by the Project

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Not Applicable	Not Applicable	Table 6.1-2, Summary of Proposed Guided Bore Locations and surficial Geology
Not Applicable	Table B-2, Oil and Gas Fields Crossed by the Project	Table 6.3-1
Table 6.3-1, Non-Fuel Mineral Resources within 0.5 Mile of the Project Area	Not Applicable	Table 6.3-2
Table 6.4.3-1, Summary of Slopes Crossed by the Proposed Pipeline Routes	Not Applicable	Table 6.4.3-1
Table 6.6-1, Shallow Bedrock Along the Proposed Pipeline Routes	Not Applicable	Table 6.6-1
Figure 6.1-1, Surficial Geology Crossed by the Project	Not Applicable	Figure 6.1-1
Figure 6.2-1, Elevation and Topography in the Project Area	Not Applicable	Figure 6.2-1
Figure 6.4.3-1, Landslide Overview	Not Applicable	Figure 6.4.3-1
Appendix 6A, Summary of Oil and Gas Wells within 0.25 Mile of the Proposed Project	Table B-3, Summary of Oil and Gas Wells within 0.25 Mile of the Project	Appendix 6A
Appendix 6B, Paleontological Assessment for the North Bakken Expansion Project, North Dakota	Not Applicable	Appendix 6B
RESOURCE REPORT 7		
Section 7.3, General Construction Impacts and Mitigation (text) (Sections 7.3.1, 7.3.2, 7.3.3, 7.3.4)	Section B.1.2, Soils	Section 7.3
Section 7.4, Cumulative Impacts (text)	Section B.10.3 – Potential Cumulative Impacts by Resource	Section 7.4
Table 7.3-1, Acres of Soil Characteristics Affected by the Proposed Project	Table B-4, Acres of Soil Characteristics Affected by the Project	Table 7.3-1
Appendix 7A, Characteristics of Soil Map Units at the Proposed Project Facilities	Not Applicable	Appendix 7A
Appendix 7B, Selected Physical and Interpretive Characteristics of the soil Map Units within the Project Area	Not Applicable	Appendix 7B
RESOURCE REPORT 8		
Section 8.2, Land Requirements (text) (Sections 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5)	Section B.5.1, Land Use	Section 8.2
Section 8.3, Land Use Impacts and Mitigation (text) (Sections 8.3, 8.3.1, 8.3.2, 8.3.3, 8.3.4, 8.3.5)	Section B.5.1, Land Use	Section 8.3
Section 8.4, Land Ownership	Not Applicable	Section 8.4
Section 8.5, Existing Residences and Planned Developments (text)	Section B.5.2, Residential Areas and Planned Developments	Section 8.5
Section 8.9, Recreation and Special Interest Areas (text)	Section B.5.6, Public Land, Recreation, and Special Interest Areas	Section 8.9
Section 8.10, Federal Land Management Plans (text) (Section 8.10.2)	Not Applicable	Section 8.10

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Resource Report No./Affected Sections, Tables, Figures, or Appendices	Corresponding Applicant-Prepared Environmental Assessment Sections, Tables, Figures, or Appendices	Where Addressed in this Supplemental Filing	
Section 8.14, Cumulative Impacts (text) (Section 8.14.2)	Section B.10.3 – Potential Cumulative Impacts by Resource	Section 8.14	
Section 8.15, References (new or updated only)	Section E	Section 8.15	
Table 8.2-1 (Land Uses Affected by Construction and Operation of the Project (in acres))	Table B-13 – Land Uses Affected by Construction and Operation of the Project (in acres)	Table 8.2-1	
Table 8.6-1 (Hazardous Waste sites Within 0.25 Miles of the Project)	Table B-14 – Hazardous Waste Sites Within 0.25 Mile of the Project	Table 8.6-1	
Figure 8.4-1, Federal Lands Crossed by the Project	Not Applicable	Figure 8.4-1	
Appendix 8A, Additional Temporary Workspace	Appendix E- Additional Temporary Workspace	Appendix 8A	
Appendix 8B, Access Roads	Appendix C- Access Roads	Appendix 8B	
Appendix 8C, Road and Railroad Crossings	Appendix F – Road and Railroad Crossings	Appendix 8C	
RESOURCE REPORT 9			
Section 9.2.4, Construction Noise Impacts (text)	Section B.8.2, Noise	Section 9.2.4	
Table 9.2.4-2, Noise Quality Analysis for the Lake Sakakawea Horizontal Directional Drill Crossing	Table B-28, Noise Quality Analysis for the Lake Sakakawea Horizontal Directional Drill Crossing	Table 9.2.4-2	
RESOURCE REPORT 10			
Section 10.4, System Alternatives (text) (Sections 10.4.1 and 10.4.2)	Section C.3, System Alternatives	Section 10.4	
Section 10.5, Facility Alternatives	Not Applicable	Section 10.5	
Section 10.6, Route Alternatives and Route Variations (text) (Sections 10.6.1, 10.6.2, 10.6.3)	Section C.4, Route Alternatives and Route Variations	Section 10.6	
Table 10.6.3-1, Summary of Minor Route Variations Identified during the Pre-Filing Process and Incorporated into the Proposed Pipeline Routes	Table C-1, Summary of Minor Route Variations Identified during the Pre-Filing Process and Incorporated into the Proposed Pipeline Routes	Table 10.6.3-1, Summary of Minor Route Variations Identified Since the Submittal of the February 2020 FERC Application	
Figure 10.4-1, System Alternatives	Figure 4, System Alternatives	Figure 10.4-1	
Figure 10.6.1-1, Federal Lands in the Project Area	Figure 5, Federal Lands in the Project Area	Figure 10.6.1-1	
Figure 10.6.1-2, Major Route Alternatives	Figure 6, Major Route Alternatives	Figure 10.6.1-2	
Not Applicable	Not Applicable	Figure 10.6.2-1, Tioga West and Tioga East Minor Route Alternatives	
Figure 10.7-1, Alternative Compressor Station Site	Figure 7, Alternative Compressor Station Site	Figure 10.7-1	
RESOURCE REPORT 11 – NO UPDATES			
RESOURCE REPORT 12 – NO UPDATES			

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1.0 UPDATES TO RESOURCE REPORT 1 – GENERAL PROJECT DESCRIPTION

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

WBI Energy Transmission, Inc. (WBI Energy) proposes to construct, modify, operate, and maintain natural gas transmission facilities in Burke, McKenzie, Mountrail, and Williams Counties, all in North Dakota, and described herein as the North Bakken Expansion Project (or Project).

The Project includes:

- The Tioga-Elkhorn Creek pipeline consisting of approximately 62.8 miles of new 24-inch-diameter natural gas pipeline from new facilities at WBI Energy's Tioga Compressor Station in Williams County to the proposed Elkhorn Creek Compressor Station in McKenzie County.
- The Elkhorn Creek-Northern Border pipeline consisting of approximately 0.3 mile of new 24-inch-diameter natural gas pipeline between the proposed Elkhorn Creek Compressor Station and Northern Border Pipeline Company (Northern Border) in McKenzie County.
- The Line Section 25 Loop includes approximately 20.3 miles of new 12-inch-diameter natural gas pipeline looping along WBI Energy's Line Section 25 between the Tioga Compressor Station and the proposed Norse Transfer Station in Burke County.
- In conjunction with the Line Section 25 Loop, the existing 0.1 mile 6-inch-diameter Stoneview-Conoco Lateral will be replaced with 0.1 mile of 8-inch-diameter natural gas pipeline from Line Section 25 to the proposed Norse Transfer Station in Burke County.
- The Line Section 30 Loop includes approximately 9.6 miles of new 12-inch-diameter natural gas pipeline looping along WBI Energy's Line Section 30 between the Nesson Valve Setting and the Tioga Compressor Station in Williams County.
- The Tioga Compressor Lateral consisting of approximately 0.5 mile of new 20-inch-diameter natural gas pipeline between the new Tioga Plant Receipt Station and new facilities to be constructed at the Tioga Compressor Station in Williams County.
- The replacement of four county road crossings and one state highway crossing to allow for the uprate of approximately 28.3 miles of Line Section 25 from a maximum allowable operating pressure (MAOP) of 700 pounds per square inch gauge (psig) to an MAOP of 1,098 psig. The uprating will require replacing and rerouting approximately 0.1 mile of 8-inch-diameter pipeline from the first county road crossing east to the proposed Norse Transfer Station in Burke County. An approximately 9.6-mile segment of Line Section 25 in Burke County will require an uprate hydrotest as part of the Project.
- The new Elkhorn Creek Compressor Station will include 3,750 horsepower (hp) of natural gas-fired compression and associated equipment/facilities in McKenzie County.

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- WBI Energy’s Tioga Compressor Station will be modified with the installation of 11,250 hp of natural gas-fired compression and new equipment/facilities to meet the design specifications of the Project.
- The replacement of the Lignite Plant Receipt Station and the Lignite Town Border Station in Burke County and the Tioga Plant Receipt Station in Williams County. Upgrades to the Robinson Lake Plant Receipt Station in Mountrail County and the Springbrook Plant Receipt Station in Williams County.
- The construction of the Norse Transfer Station in Burke County.
- The construction of a new interconnect with Northern Border west of the proposed Elkhorn Creek Compressor Station in McKenzie County.
- The installation of pig launcher/receivers, one at each end of the proposed Tioga-Elkhorn Creek pipeline and at milepost (MP) 6.2, one at each end of the proposed Line Section 25 Loop, one at each end of the proposed Line Section 30 Loop, one at each end of the proposed Tioga Compressor Lateral as well as at the proposed Norse Transfer Station and the new Lignite Plant Receipt Station. WBI Energy will also install six mainline block valves, with four block valves installed along the length of the Tioga-Elkhorn Creek pipeline in McKenzie and Williams Counties and two block valves along the length of the Line Section 25 Loop in Mountrail and Burke Counties.

As required by Title 18 of the Code of Federal Regulations (CFR) Part 380.12, WBI Energy has prepared this Environmental Report in support of its application to the Federal Energy Regulatory Commission (FERC or Commission) for a Certificate of Public Convenience and Necessity (Certificate) under section 7(c) of the Natural Gas Act to construct, modify, operate and maintain the proposed facilities.

1.1 PROJECT DESCRIPTION

1.1.1 Purpose and Need

The purpose of the Project is to provide up to 250,000 million cubic feet per day of incremental firm transportation capacity from natural gas processing plants in northwestern North Dakota to a proposed interconnect with Northern Border. The need for new pipeline infrastructure in the Williston Basin of northwest North Dakota is of critical importance to allow for the transportation of increasing levels of associated natural gas production to Midwestern markets, and to assist in meeting established state-mandated natural gas capture targets. These targets require producers to capture a certain percentage of natural gas production on an annual basis. In order to meet their continued oil production targets, producers are entering into natural gas gathering and processing agreements. The Project is designed to transport the natural gas that is being processed as a result.

The Williston Basin spans parts of North Dakota, South Dakota, and Montana as well as Manitoba and Saskatchewan in Canada. The Williston Basin is one of the most prolific oil and associated natural gas production areas within the United States due to the presence of the Bakken and Three Forks Formations (Energy of North Dakota, 2020). Conventional hydrocarbon production began in the Bakken Formation when oil was first produced there in 1955. Recent advances in horizontal drilling technologies, however,

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have led to a resurgence of drilling activity in the area resulting in exponential growth in the last 20 years. Although the Bakken and Three Forks Formations are primarily oil plays, there is associated rich natural gas that is produced along with the oil (U.S. Energy Information Administration, 2017). Rich natural gas generally requires investments in gas processing infrastructure before it can be delivered to market (Energy of North Dakota, 2020b). As a result, some of the gas currently produced is flared because the producer focus has been on the higher value oil, and the economics have not historically supported gas-processing infrastructure. According to the North Dakota Department of Mineral Resources, flaring of natural gas in the state is at approximately 17 percent as of November 2019; the historical high of gas flared (36 percent) occurred in September 2011 (North Dakota Department of Mineral Resources, 2020).

WBI Energy is unable to provide a precise estimate of the overall volume of natural gas that would no longer be vented or flared once the Project is in operation. There are multiple factors associated with the oil and natural gas production in the region, which interact with and contribute to the flaring of natural gas. These factors include the lower economic value of natural gas to producers compared to the higher economic value of oil and limited or insufficient gathering facilities and gas processing capacity. However, companies in the region have responded to the significant growth (and expected growth) in associated natural gas production and to the North Dakota Industrial Commission’s Order No. 24665¹ by building out natural gas infrastructure at a rapid pace.

According to the North Dakota Department of Mineral Resource (2020), in November 2019 natural gas production from the Bakken and Three Forks Formations was approximately 3.1 billion cubic feet (Bcf) per day; of this amount, approximately 2.6 Bcf per day was captured and processed. Conversely, approximately 0.5 Bcf per day, or approximately 17 percent, was flared due to limited or insufficient field gathering facilities, inadequate natural gas processing capacity and/or pipeline infrastructure. By 2022, the North Dakota Pipeline Authority has forecasted natural gas production will be between 3.1 and 3.7 Bcf per day (Kringstad, 2019). According to the North Dakota Pipeline Authority (2020), it is estimated that by the end of 2021, the natural gas processing capacity in North Dakota will increase to nearly 4.0 Bcf per day. The six processing plants associated with this Project represent approximately 17 percent of the nearly 3.2 Bcf per day of total natural gas processing capacity available in North Dakota today. Although the capacity requested under the Precedent Agreements associated with the Project is targeting incremental natural gas volumes, the availability of this capacity may help mitigate natural gas flaring over time.

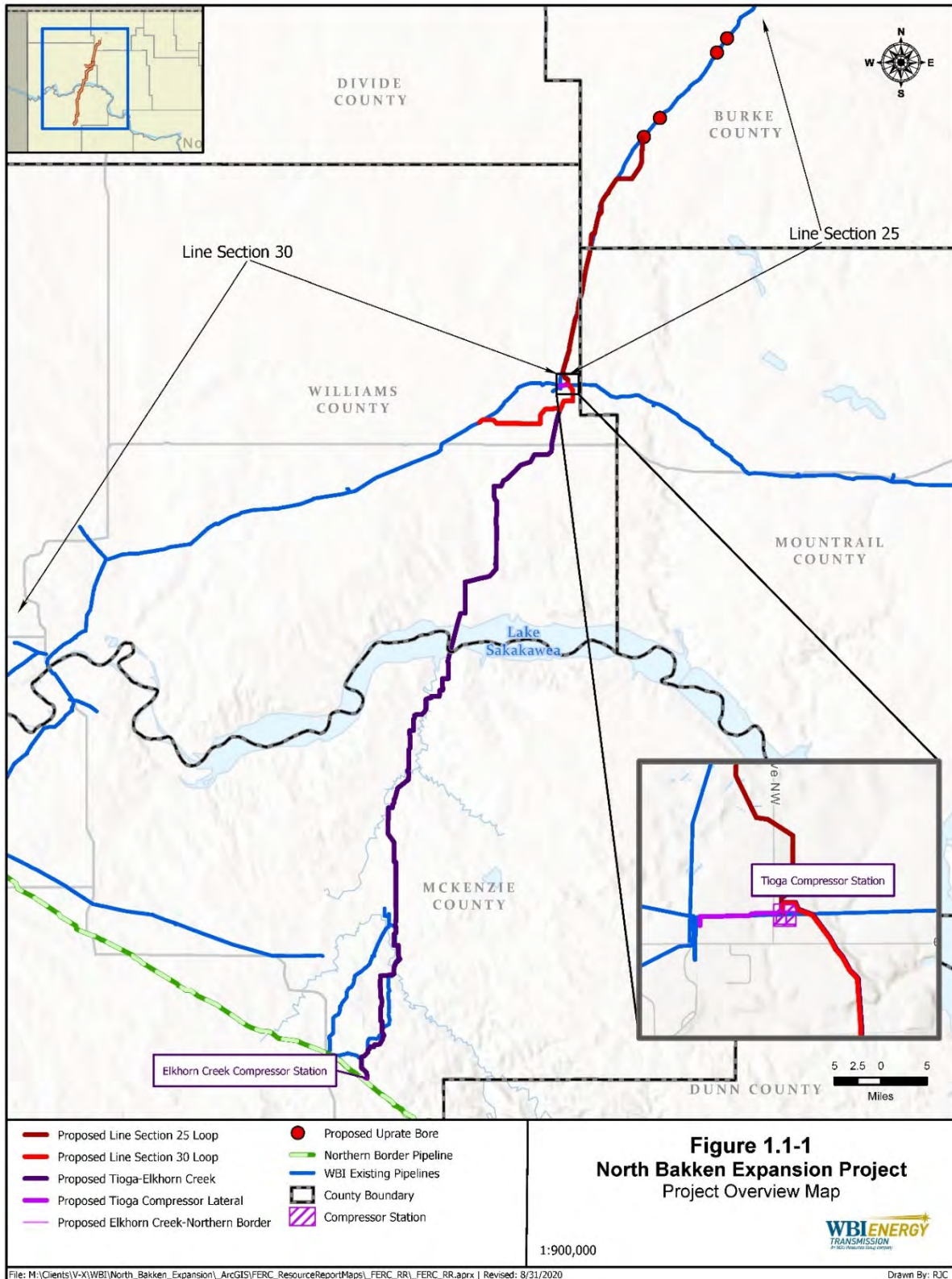
1.1.2 Location and Description of Facilities

The proposed Project facilities will be located in Burke, Mountrail, Williams, and McKenzie Counties, all in North Dakota (see figure 1.1-1). Topographic route maps depicting the location of the proposed pipeline routes and aboveground facility sites are provided in appendix 1A. The aerial-based construction alignment sheets for the Project are provided in appendix 1B. Information on existing land uses along the proposed pipelines and within the aboveground facility sites is provided in Resource Report 8.

¹ In 2014, the North Dakota Industrial Commission issued Order No. 24665. This order established limits on the amount of natural gas that can be flared by oil and natural gas production companies. On November 20, 2018, the North Dakota Industrial Commission approved amending this Order, with updated policy goals to “increase the volume of captured gas and reduce the percentage of flared gas and to incentivize investment in gas capture infrastructure.” The current gas capture policy requires production companies to limit flaring to 12 percent. The flaring limit drops to nine percent on November 1, 2020.

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1.1.2.1 Pipeline Facilities

The Project’s proposed pipeline facilities will include the construction and operation in total of approximately 93.5 miles of new pipeline, pipeline looping, and pipeline replacement as well as replacement of an additional 0.5 mile of pipeline along a 28.3-mile segment of WBI Energy’s existing Line Section 25 pipeline in order to increase the MAOP of the pipeline segment. The proposed pipeline facilities are summarized in table 1.1.2-1 and described in more detail below.

TABLE 1.1.2-1				
North Bakken Expansion Project Proposed Pipeline Facilities				
Pipeline Facilities	County	Approximate Mileposts		Length (miles) ^a
		Begin	End	
NEW PIPELINE				
Tioga-Elkhorn Creek	Williams	0.0	25.3	25.3
	McKenzie	25.3	62.8	37.5
	Subtotal			62.8
Elkhorn Creek-Northern Border	McKenzie	0.0	0.3	0.3
	Subtotal			0.3
Line Section 25 Loop ^b	Williams	0.0	6.7	6.7
	Mountrail	6.7	10.3	3.7
	Burke	10.3	20.3	10.0
	Subtotal			20.3
Line Section 30 Loop	Williams	0.0	9.6	9.6
	Subtotal			9.6
Tioga Compressor Lateral	Williams	0.0	0.5	0.5
	Subtotal			0.5
	New Pipeline Subtotal			93.5
MODIFICATIONS/UPDATES TO EXISTING PIPELINE				
Uprate Line Section 25 ^c	Burke	NA	NA	0.5
	Modifications/Updates Subtotal			0.5
TOTAL PIPELINE LENGTH				94.0
^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.			
^b	Includes 20.3 miles of new Line Section 25 Loop pipeline in Williams, Mountrail, and Burke Counties and the replacement of 676 feet of 6-inch-diameter lateral pipeline with 665 feet of 8-inch-diameter pipeline in Burke County.			
^c	Includes the replacement of about 0.4 mile of existing pipeline via the guided bore method at four county road crossings and one state highway crossing (92nd Street NW; 93rd Street NW/89th Avenue NW [both crossed by the same bore]; 86th Street NW, and Highway 40) and replacing and rerouting about 0.1 mile of existing 8-inch-diameter pipeline from the 86th Street NW bore to the proposed Norse Transfer Station.			

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Tioga-Elkhorn Creek Pipeline

The Tioga-Elkhorn Creek pipeline will include approximately 62.8 miles of new 24-inch-diameter natural gas pipeline from new facilities installed at WBI Energy's Tioga Compressor Station near Tioga, North Dakota in Williams County to the proposed Elkhorn Creek Compressor Station southeast of Watford City, North Dakota in McKenzie County. The new pipeline will have bi-directional flow capabilities with an MAOP of 1,480 psig. This pipeline route is bisected by Lake Sakakawea at approximately the border of Williams and McKenzie Counties. A pig launcher/receiver will be installed at each end of the new pipeline and at MP 6.1. Four mainline block valve settings will be spaced throughout the length of the pipeline.

Elkhorn Creek-Northern Border Pipeline – No Edits

Line Section 25 Loop Pipeline

The Line Section 25 Loop will include approximately 20.3 miles of new 12-inch-diameter natural gas pipeline looping on WBI Energy's existing Line Section 25 between the Tioga Compressor Station and the proposed Norse Transfer Station in Burke County. The pipeline will have bi-directional flow capabilities with an MAOP of 1,098 psig. The new pipeline will serve to loop WBI Energy's existing 8-inch-diameter Line Section 25, which has an existing MAOP of 700 psig. A pig launcher/receiver will be installed at each end of the new pipeline with two mainline block valve settings spaced throughout the length of the pipeline.

In conjunction with the Line Section 25 Loop, WBI Energy will remove approximately 0.1 mile (about 676 feet) of the existing 6-inch-diameter Stoneview-Conoco Lateral that originates at WBI Energy's existing 8-inch-diameter Line Section 25 and traverses north to the existing Norse Plant Receipt Station in Burke County. WBI Energy will construct approximately 665 feet of new 8-inch-diameter natural gas pipeline to parallel the proposed Line Section 25 Loop at about MP 20.2 and terminate at the proposed Norse Transfer Station. The new pipeline will become a continuation of the existing Line Section 25 and will be operated at the current Line Section 25 MAOP of 700 psig. The proposed Norse Transfer Station will provide the proper overpressure protection for the facilities operated at a MAOP of 700 psig from the uprated Line Section 25 MAOP of 1,098 psig north of the Norse Transfer Station.

Line Section 30 Loop Pipeline

The Line Section 30 Loop will include approximately 9.6 miles of new 12-inch-diameter natural gas pipeline looping. The Line Section 30 Loop will originate and diverge from WBI Energy's existing 12-inch-diameter Line Section 30 at the existing Nesson Valve Setting in Williams County. The pipeline will have bi-directional flow capabilities with an MAOP of 700 psig. The new pipeline will traverse east to approximately MP 4.5, then north and northeast to approximately MP 5.8, and continue east until paralleling the proposed Tioga-Elkhorn Creek pipeline (approximately MPs 6.9 to 9.6), ending at the Tioga Compressor Station. There will be a pig launcher/receiver at each end of the pipeline; no additional mainline block valves will be installed.

Tioga Compressor Lateral – No Edits

Uprate Line Section 25 – No Edits

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1.1.2.2 Aboveground Facilities

Compressor Stations

Table 1.1.2-2 summarizes the Project’s proposed new and modified compressor stations.

TABLE 1.1.2-2 North Bakken Expansion Project Proposed New and Modified Compressor Stations			
Facility	Approximate Location	County	Description
Tioga Compressor Station (modifications to existing compressor station)	MP 0.0 of the Tioga-Elkhorn Creek pipeline	Williams	Installation of additional 11,250 hp of compression and new equipment/facilities at the existing compressor station
Elkhorn Creek Compressor Station (new compressor station)	MP 62.8 of the Tioga-Elkhorn Creek pipeline	McKenzie	Construction of a 3,750 hp greenfield compressor station

Modifications to Tioga Compressor Station

WBI Energy proposes modify its Tioga Compressor Station with the installation of an additional 11,250 hp of compression and new equipment and facilities to meet design specifications of the Project. WBI Energy will install a new transfer grid to tie-in WBI Energy’s existing Line Sections 7, 25, and 30 as well as the new Tioga-Elkhorn Creek pipeline, the Line Sections 25 and 30 Loop pipeline, and the Tioga Compressor Lateral. The existing station fencing will be extended to accommodate the station expansion. A new permanent access road will be constructed in the northwest corner of the existing station. All facility additions will be constructed within WBI Energy’s existing parcel for the station.

New equipment and facilities include:

- three new compressor units, each consisting of a skid-mounted 3,750 hp Caterpillar G3612 natural gas-fired engine coupled to a KBZ-4 compressor unit;
- two new compressor buildings; one building housing two compressor units; one building housing one compressor unit;
- a combination gas and engine auxiliary cooler for each new compressor unit (three total);
- a 592-kilowatt backup power generator driven by a natural gas-fired 840 hp Waukesha F3524GSI engine;
- two 2.47 million British thermal units per hour (MMBtu/hr) gas boilers for building heating and one 0.25 MMBtu/hr building unit heater;
- one underground 3,000-gallon pipeline liquids storage tank;
- one underground 3,000-gallon used oil storage tank;

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- one underground 3,000-gallon floor drain tank to collect wastewater;
- relocation of an existing stormwater retention pond;
- one transfer building and one auxiliary building to house the new equipment; and
- four pig launcher/receivers (one 24 inches in diameter for the Tioga-Elkhorn Creek pipeline, one 20 inches in diameter for the Tioga Compressor Lateral, and two 12 inches in diameter for the Line Sections 25 and 30 Loop pipeline).

Elkhorn Creek Compressor Station

WBI Energy proposes to construct a new 3,750 hp greenfield compressor station with associated equipment and facilities on an approximately 10.9-acre site in the SE1/4 Sec. 33, T149N, R98W in McKenzie County. The new station will be tied into the new Tioga-Elkhorn Creek pipeline near MP 62.8 and the proposed Elkhorn Creek-Northern Border pipeline. WBI Energy has signed a purchase agreement for the site. WBI Energy will install a new permanent access road to the facility from County Road 34/18th Street NW.

The new compressor station facilities will include:

- one skid-mounted 3,750 hp Caterpillar G3612 natural gas-fired engine coupled to a KBZ-4 compressor unit within a new compressor building;
- a combination gas and engine auxiliary cooler;
- one 1.69 MMBtu/hr gas boiler for building heating, one 0.2 MMBtu/hr water heater, one 0.25 MMBtu/hr building unit heater, and one 0.12 MMBtu/hr fuel gas preheater;
- one underground 2,000-gallon pipeline liquids storage tank;
- one underground 2,000-gallon waste oil storage tank;
- one underground 2,000-gallon floor drain tank to collect wastewater;
- one transfer building to house the transfer grid piping, gas cleaning equipment, and gas measurement and regulation equipment;
- one auxiliary building to house the motor control center (including an emergency generator electrical transfer switch), the station and fire/gas programmable logic controller and human-machine interface, and an office/shop area; and
- a 24-inch-diameter pig launcher/receiver, associated piping and valves, and septic system.

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Delivery, Receipt, and Transfer Stations

Table 1.1.2-3 summarizes the Project’s proposed new and modified delivery, receipt, and transfer stations.

TABLE 1.1.2-3			
North Bakken Expansion Project Proposed New and Modified Delivery, Receipt, and Transfer Stations			
Facility	Approximate Location	County	Description
Lignite Plant Receipt Station and Lignite Town Border Station (replace)	Offline (along Line Section 25)	Burke	Replacement of existing Lignite Plant Receipt Station and the Lignite Town Border Station at the same location to accommodate incremental volumes
Norse Plant Receipt Station (upgrade)	MP 20.3 of the Line Section 25 Loop	Burke	Replacement of existing receipt station at current location to accommodate incremental flow volumes
Norse Transfer Station (new)	MP 20.3 of the Line Section 25 Loop	Burke	Construction of new transfer station to protect facilities operated at a MAOP of 700 psig from the 1,098 psig MAOP of the Line Section 25 Loop
Northern Border Interconnect (new)	Offline (west of the Elkhorn Creek Compressor Station)	McKenzie	Construction of new interconnect facilities on the Northern Border west of the Elkhorn Creek Compressor Station to accommodate incremental volumes
Robinson Lake Plant Receipt Station (upgrade)	Offline (on Line Section 7)	Mountrail	Upgrade the meter and station piping to accommodate incremental volumes
Springbrook Plant Receipt Station (upgrade)	Offline (along Line Section 30 pipeline)	Williams	Upgrade the meter and station piping to accommodate incremental volumes
Tioga Plant Receipt Station (replace)	MP 0.0 of the Tioga Compressor Lateral	Williams	Replacement of existing station to a new location to accommodate incremental volumes

Lignite Plant Receipt Station and Lignite Town Border Station – No Edits

Norse Plant Receipt Station

WBI Energy proposes to rebuild the Norse Plant Receipt Station at the existing location at about MP 20.3 of the proposed Line Section 25 Loop. These modifications are necessary to accommodate incremental volumes associated with the Project. The new station will include a new building with telemetry and gas quality instrumentation and a second building with high-pressure metering, an odorant system, and station piping with overpressure protection equipment. Access to the Norse Plant Receipt Station will be via an existing entrance off of 86th Street NW within the permanent facility workspace. WBI Energy previously obtained an easement for the existing station; no additional land will be required.

Norse Transfer Station

WBI Energy proposes to construct a new transfer station on a new tract adjacent to and south of the Norse Plant Receipt Station near MP 20.3 of the proposed Line Section 25 Loop. The new station will include a new building with regulation and overpressure protection equipment to provide overpressure protection to facilities operated at a MAOP of 700 psig. The transfer station’s telemetry equipment will be housed in the

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Norse Plant Receipt Station. WBI Energy will purchase the required land. Three pig launcher/receivers will be installed within the boundary of the proposed Norse Transfer Station and include a 12-inch-diameter pig launcher/receiver for the proposed Line Section 25 Loop and two 8-inch-diameter pig launcher/receivers for Line Section 25 (one northbound and one southbound).

Northern Border Interconnect

New facilities to interconnect with Northern Border west of the proposed Elkhorn Creek Compressor Station will be constructed to accommodate incremental transportation volumes associated with the Project. The facilities will be constructed on an approximately 3.2-acre parcel of land in the SE ¼ of Section 33, Township 149 North, Range 98 West in McKenzie County. WBI Energy has signed an easement agreement with a third-party landowner for the Northern Border facilities. The facilities WBI Energy will construct, own, and operate include a new building that will house RTU and telemetry equipment. WBI Energy will reimburse Northern Border for the cost of a tap and measurement facilities it will construct, own, and operate. Access to the interconnect will be via a new permanent access road from 18th Street NW.

Robinson Lake Plant Receipt Station – No Edits

Springbrook Plant Receipt Station – No Edits

Tioga Plant Receipt Station – No Edits

Block Valves and Pig Launchers/Receivers

Table 1.1.2-4 summarizes the proposed block valves and pig launcher/receivers associated with the Project.

TABLE 1.1.2-4			
North Bakken Expansion Project Proposed Block Valves and Pig Launcher/Receivers			
Pipeline Facility ^{a/} Block Valve or Pig Launcher/ Receiver Name or I.D.	Approx. Location Along the Pipeline Route (milepost)	County	Description
Tioga-Elkhorn Creek			
Pig launcher/receiver 1	0.0	Williams	Install within the Tioga Compressor Station
Pig launcher/receiver 2 ^b	6.2	Williams	Install at 104th Avenue NW
56th Avenue NW Block Valve ^c	16.2	Williams	New block valve along Tioga-Elkhorn Creek pipeline.
South Lake Block Valve ^b	26.2	McKenzie	New block valve along Tioga-Elkhorn Creek pipeline
Highway 10 Block Valve ^b	37.0	McKenzie	New block valve along Tioga-Elkhorn Creek pipeline
Cherry Creek Block Valve ^b	51.4	McKenzie	New block valve along Tioga-Elkhorn Creek pipeline

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TABLE 1.1.2-4			
North Bakken Expansion Project Proposed Block Valves and Pig Launcher/Receivers			
Pipeline Facility ^a / Block Valve or Pig Launcher/ Receiver Name or I.D.	Approx. Location Along the Pipeline Route (milepost)	County	Description
Pig launcher/receiver 3	62.8	McKenzie	Install within the new Elkhorn Creek Compressor Station
Line Section 25 Loop			
Pig launcher/receiver 4	0.0	Williams	Install within the Tioga Compressor Station
Valve No. 6.8 ^b	6.9	Mountrail	New valve site east of 102nd Road along Line Section 25 Loop pipeline
Valve No. 13.6 ^b	13.6	Burke	New valve site south of 81st Street along Line Section 25 Loop pipeline
Pig launcher/receiver 5 and 6	20.3	Burke	Install at the new Norse Transfer Station (one for the Line Section 25 Loop and one for the 665 feet of 8-inch-diameter pipeline replacement/extension)
Line Section 30 Loop			
Pig launcher/receiver 7	0.0	Williams	Install at the Nesson Valve Setting
Pig launcher/receiver 8	9.6	Williams	Install within the Tioga Compressor Station
Tioga Compressor Lateral			
Pig launcher/receiver 9	0.0	Williams	Install within the Tioga Plant Receipt Station
Pig launcher/receiver 10	0.5	Williams	Install within the Tioga Compressor Station
Uprate Line Section 25			
Pig launcher/receiver 11	N/A	Burke	Install at the new Norse Transfer Station
Pig launcher/receiver 12	N/A	Burke	Install at the Lignite Border Station
^a	No new block valves or pig launcher/receivers will be installed along the Elkhorn Creek-Northern Border pipeline.		
^b	New permanent access roads will be constructed to provide access to these facilities during operation as shown in the maps in appendix 1A and the access road table in Resource Report 8, appendix 8B.		
^c	56th Street NW will be used to access this facility during operation.		

1.1.3 Land Requirements

Table 1.1.3-1 summarizes the land requirements for the Project. More detailed information regarding land requirements and use are provided in Resource Report 8. Construction of the Project will affect approximately 1,469.5 acres of land, including the pipeline construction rights-of-way, additional temporary workspace (ATWS), staging areas, temporary and permanent access roads, and aboveground facilities. Following construction, approximately 874.6 acres, including the temporary construction right-of-way, ATWS, staging areas, temporary access roads, and temporary workspace at aboveground facility sites, will revert to preconstruction conditions and uses. The remaining approximately 594.9 acres, including the permanent pipeline easements, permanent aboveground facility sites, and permanent access roads, will be retained for operation of the Project facilities.

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1.1.3.1 Pipeline Rights-of-Way

In total, pipeline construction will require approximately 1,005.3 acres, of which approximately 568.1 acres will be retained as permanent easement (see table 1.1.3-1). Appendix 1C provides typical pipeline construction right-of-way cross sections.

Construction of the proposed 12-inch-diameter Line Sections 25 and 30 Loop pipelines and the 20-inch-diameter Tioga Compressor Lateral will require a standard 75-foot-wide construction right-of-way. Except across U.S. Forest Service (USFS) land,² construction of the proposed 24-inch-diameter Tioga-Elkhorn Creek and Elkhorn Creek-Northern Border pipelines will require a 100-foot-wide construction right-of-way. This additional 25 feet of right-of-way width will be necessary to provide sufficient workspace to accommodate topsoil storage while allowing safe passage of construction equipment and material along the working side of the right-of-way during construction. Refer to section 1.3 for additional construction details and WBI Energy's request to use a 100-foot wide construction right-of-way for the 24-inch-diameter pipeline. As shown in the drawings provided in appendix 1C, the construction right-of-way typically will consist of a 50-foot-wide working side and a 25-foot-wide spoil side for the standard 75-foot-wide construction right-of-way and a 70-foot-wide working side and a 30-foot-wide spoil side for the 100-foot-wide construction right-of-way. Following construction, a 50-foot-wide permanent easement will be retained for pipeline operations; the remainder of the construction right-of-way will be restored to pre-existing conditions.

The Tioga-Elkhorn Creek pipeline and Line Section 30 Loop will be collocated from the Tioga Compressor Station to approximately MP 2.8 of the Tioga-Elkhorn Creek pipeline (MPs 6.8 to 9.6 of the Line Section 30 Loop). Overlapping portions of the temporary and permanent rights-of-way along the collocated distance will be used during construction and/or operation of both pipelines.

To minimize the Project footprint, WBI Energy proposes to collocate new pipeline facilities with existing pipeline, utility, and road corridors to the extent practicable. As shown in the summary table in appendix 1D, the new pipelines will be collocated along 43.8 miles (or 47 percent) of the pipeline routes, including:

- 23.6 miles (38 percent) of the Tioga-Elkhorn Creek pipeline;
- 0.2 mile (67 percent) of the Elkhorn Creek-Northern Border pipeline;
- 14.8 miles (73 percent) of the Line Section 25 Loop;
- 4.7 miles (49 percent) of the Line Section 30 Loop³; and
- 0.5 mile (100 percent) of the Tioga Compressor Lateral.

² The construction right-of-way width across USFS land will be reduced to 50 feet with an additional 25 feet of temporary workspace. For the purposes of this FERC filing, the temporary workspace is treated as temporary construction right-of-way.

³ Reduction in collocation on Line Section 30 is due to the numbers presented in the February 14, 2020 FERC Application included an overlap of collocation presented along one stretch for the alignment.

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TABLE 1.1.3-1			
North Bakken Expansion Project Summary of Land Requirements ^a			
Facility	County	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Rights-of-Way ^b			
Tioga-Elkhorn Creek ^c	Williams, McKenzie	724.3	380.1
Elkhorn Creek-Northern Border	Williams	2.7	1.4
Line Section 25 Loop ^{d,e}	Williams, Mountrail, and Burke	183.8	123.0
Line Section 30 Loop ^c	Williams	86.8	57.9
Tioga Compressor Lateral	Williams	3.9	2.8
Uprates to Line Section 25	Burke	3.8	3.0
	Subtotal	1,005.3	568.1
Additional Temporary Workspace			
Tioga-Elkhorn Creek	Williams, McKenzie	78.0	0.0
Line Section 25 Loop	Williams, Mountrail, and Burke	27.0	0.0
Line Section 30 Loop	Williams	10.1	0.0
Tioga Compressor Lateral	Williams	0.5	0.0
Uprates to Line Section 25 ^f	Burke	11.5	0.0
	Subtotal	127.0	0.0
Staging Areas			
68th Street Yard	Williams	20.4	0.0
Boehm Staging Yard	McKenzie	6.2	0.0
CRS Yard	Williams	22.8	0.0
Delta Contractors Yard	McKenzie	23.6	0.0
Enget Yard	Mountrail	39.8	0.0
Flatlands Yard 1	McKenzie	4.9	0.0
Flatlands Yard 2	McKenzie	6.1	0.0
Lobell Yard	Williams	39.5	0.0
Schmidt Yard	Williams	8.4	0.0
Weffen Staging Yard	Williams	17.7	0.0
Franz Yard ^g	McKenzie	22.2	0.0
Aux Sable Yard ^g	Williams	46.2	0.0
	Subtotal	257.8	0.0
Access Roads			
Temporary access roads	Multiple	43.4	0.0

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TABLE 1.1.3-1					
North Bakken Expansion Project Summary of Land Requirements ^a					
Facility	County	Land Affected During Construction (acres)	Land Affected During Operation (acres)		
Permanent access roads	Multiple	2.6	2.6		
Subtotal		46.0	2.6		
Aboveground Facilities					
Elkhorn Creek Compressor Station (new)	McKenzie	13.1	10.9		
Tioga Compressor Station (existing)	Williams	8.0	4.4 ^h		
Lignite Plant Receipt Station and Lignite Town Border Station (existing)	Burke	0.6	0.6		
Norse Plant Receipt Station (existing)	Burke	0.6	0.6		
Norse Transfer Station (new)	Burke	1.5	0.3		
Northern Border Interconnect (new)	McKenzie	4.2	3.2		
Robinson Lake Plant Receipt Station (existing)	Mountrail	1.4	0.6		
Springbrook Plant Receipt Station (existing)	Williams	1.0	0.4		
Tioga Plant Receipt Station (existing)	Williams	1.1	1.1		
Block valves (new) ⁱ	Burke, McKenzie, Mountrail, and Williams	1.7	1.7		
Pig launcher/receivers (new) ⁱ	Burke, McKenzie, and Williams	0.2	0.2		
Subtotal		33.4	24.1		
PROJECT TOTAL		1,469.5	594.9		
^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.				
^b	Based on a 100-foot-wide construction right-of-way for the 24-inch-diameter pipelines, a 75-foot-wide construction right-of-way for the 20-, 12-, and 8-inch-diameter pipelines, and a 50-foot-wide permanent right-of-way for all new pipeline facilities. Includes the appurtenant facilities located within the pipeline right-of-way (i.e., block valves, cathodic protection facilities).				
^c	The Tioga-Elkhorn Creek and Line Section 30 Loop pipelines will be collocated from the Tioga Compressor Station to approximately MP 2.8 of the Tioga-Elkhorn Creek pipeline (MPs 6.8 to 9.6 of the Line Section 30 Loop). Portions of the temporary and permanent right-of-way that overlap along the collocated portion will be used during construction and/or operation of both pipelines.				
^d	Includes the replacement of 676 feet of 6-inch-diameter lateral pipeline with 665 feet of 8-inch-diameter pipeline.				
^e	Includes the road crossing replacements via guided bore and replacing and rerouting of about 0.1 mile of existing 8-inch-diameter pipeline from the 86th Street NW bore to the proposed Norse Transfer Station.				
^f	Also includes temporary workspace required for removal of the existing 0.1 mile of 8-inch-diameter pipeline to be rerouted.				
^g	The Franz and Aux Sable Yards were newly added after WBI Energy's February 14, 2020 FERC Application.				
^h	All 4.4 acres are within WBI Energy's Tioga Compressor Station owned property boundaries; however, 2.2 acres are outside of the existing chain-linked fenced facility. The fence will be extended to encompass the compressor station expansion.				
ⁱ	Four of the six proposed block valves (Valve No. 13.6, the 56th Avenue NW Block Valve, the Highway 10 Block Valve, and the South Lake Block Valve) will be constructed entirely within the permanent pipeline rights-of-way and no				

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TABLE 1.1.3-1			
North Bakken Expansion Project Summary of Land Requirements ^a			
Facility	County	Land Affected During Construction (acres)	Land Affected During Operation (acres)
<p style="text-align: center;">additional land will be required for their construction or operation. However, the Cherry Creek Block Valve and Valve No. 6.8 will require an additional 0.9 and less than 0.1 acre of land, respectively, outside the existing permanent pipeline right-of-way for construction and operation.</p> <p style="text-align: center;">All but one of the pig launcher/receiver sites will be constructed and operated within a compressor, receipt and /or transfer station or valve setting sites; no additional land will be required for construction and operation of these facilities. The remaining pig launcher/receiver will affect 0.2 acre outside the existing permanent pipeline right-of-way during construction and operation.</p>			

1.1.3.2 Additional Temporary Workspace

ATWS outside of the construction rights-of-way will be required for certain road crossings, points of inflection along the route, areas where special construction methods will be implemented (e.g., the horizontal directional drill [HDD] or guided bore method), and areas where additional space is needed for storage of stripped topsoil. In total, use of ATWS during construction will affect approximately 127.0 acres (see table 1.1.3-1), all of which will be restored to preconstruction condition. A list of these ATWS locations is provided in appendix 8A of Resource Report 8. Locations of ATWS are also depicted on the route maps provided in appendices 1A and 1B.

Unless topographic or other factors impose constraints, ATWS will be set back at least 50 feet from the edges of waterbodies and wetlands except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. WBI Energy is requesting modifications to the FERC *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures)⁴ for the site-specific locations where less than a 50-foot setback from the edges of waterbodies and wetlands is proposed (see section 1.3).

1.1.3.3 Staging Areas

The construction contractor will require 12 staging areas for office trailers, parking, vehicle maintenance, and storage of pipe and equipment during construction of the Project (see table 1.1.3-1). These staging areas are depicted on the Project route maps provided as appendices 1A and 1B.

As shown in table 1.1.3-1, use of the staging areas will affect approximately 257.8 acres. Preparation of the staging areas will consist of topsoil segregation and minor grading and leveling; however, these impacts will be temporary. Once construction is complete, all land within the staging areas will be restored to preconstruction conditions (including topsoil replacement) in accordance with the FERC *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan)⁵ and landowner agreements. There will be no permanent impacts in these areas

⁴ The FERC Procedures is available online at: <http://www.ferc.gov/industries/gas/enviro/guidelines.asp>.

⁵ The FERC Plan is available online at: <http://www.ferc.gov/industries/gas/enviro/guidelines.asp>.

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1.1.3.4 Temporary and Permanent Access Roads

WBI Energy will use existing public and private access roads on a temporary basis to transport personnel, equipment, vehicles, and materials to the proposed Project work areas during construction. Standard-maintenance public roads will be used for access without modification or improvement. Some minimum-maintenance public roads and private roads, however, will require improvement (such as grading; placement of gravel, crushed rock, or scoria for stability and surface improvement; replacing or installing culverts; and clearing of overhead vegetation, if present) to safely accommodate Project equipment and vehicles. A list of these roads is provided in appendix 8C of Resource Report 8. Locations of access roads are depicted on the Project route maps provided as appendices 1A and 1B.

Use of temporary access roads will affect approximately 43.4 acres (see table 1.1.3-1). If any of the temporary access roads are damaged by the Project, WBI Energy will restore the roads to pre-existing condition or better. As a result, the Project will have no permanent impact on these roads.

As currently designed, WBI Energy will construct 10 new permanent access roads to provide access to the aboveground facilities. These permanent access roads will affect 2.6 acres. If additional access roads required for construction or operation of the Project are identified at a later date; WBI Energy will submit a variance request to FERC for approval to use the road and complete all appropriate federal, state, and local permitting associated with the Project change.

1.1.3.5 Aboveground Facilities

Compressor Stations

Modifications to Tioga Compressor Station

Construction and operation of the proposed modifications to WBI Energy's Tioga Compressor Station at MP 0.0 of the Tioga-Elkhorn Creek pipeline will affect about 8.0 acres. This includes 4.4 acres within the Tioga Compressor Station site property; 2.2 acres of which is outside of the existing chain-linked fenced facility but within WBI Energy's existing owned property boundaries. The fence will be extended to encompass the compressor station expansion. The remainder consists of temporary workspace, which will be restored to preconstruction condition following construction. Topsoil removed from within the fenced facility during construction will be spread over the temporary workspace during restoration of this area. A plot plan for the compressor station is provided as appendix 1E (filed under separate cover in Volume III of WBI Energy's February 14, 2020 FERC Application as Controlled Unclassified Information/Critical Energy Infrastructure Information [CUI//CEII]).

It should be noted that while the overall workspace for the Tioga Compressor Station has not changed since the February 14, 2020 FERC Application, the reduction in the temporary workspace is due to an increase in overlap of the Line Section 30 and Tioga-Elkhorn Creek pipeline rights-of-way as they approach and enter the station workspace.

Elkhorn Creek Compressor Station

Construction and operation of the Elkhorn Creek Compressor Station at MP 62.8 of the Tioga-Elkhorn Creek pipeline will affect about 13.1 acres. This includes 10.9 acres that will be fenced and maintained for

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operation of the compressor station. The remainder consists of temporary workspace, which will be restored to preconstruction condition following construction. Topsoil removed during construction will be spread over the temporary workspace during restoration of this area. A plot plan for the compressor station is provided in appendix 1E (filed under separate cover in Volume III of WBI Energy's September 14, 2020 FERC Application as CUI//CEII).

Delivery, Receipt, and Transfer Stations

Construction of new and modifications to existing delivery, receipt, and transfer stations will affect about 10.4 acres of land, including:

- 0.6 acre for replacement of the existing Lignite Plant Receipt Station and the Lignite Town Border Station;
- 0.6 acre for replacement of the existing Norse Plant Receipt Station;
- 1.5 acres for construction of the new Norse Transfer Station;
- 4.2 acres for construction of the new Northern Border Interconnect;
- 1.4 acres for upgrades to the existing Robinson Lake Plant Receipt Station;
- 1.0 acre for upgrades to the existing Springbrook Plant Receipt Station; and
- 1.1 acres for replacement of the Tioga Plant Receipt Station.

About 6.8 acres will be retained for operation of these stations, including:

- 0.6 acre for the Lignite Plant Receipt and Town Border Stations;
- 0.6 acre for the Norse Plant Receipt Station;
- 0.3 acre for the Norse Transfer Station;
- 3.2 acre for the Northern Border Interconnect;
- 0.6 acre for the Robinson Lake Plant Receipt Station;
- 0.4 acre for the Springbrook Plant Receipt Station; and
- 1.1 acre for the Tioga Plant Receipt Station.

The remaining 3.6 acres of temporary workspace will be restored to preconstruction condition following construction.

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Block Valves and Pig Launchers/Receivers

WBI Energy will construct six block valves, four of which will be entirely within the permanent pipeline rights-of-way. The remaining two block valves (the Cherry Creek Block Valve and Valve No. 6.8) will affect 1.7 acre outside the permanent right-of-way, all of which will be retained during operations. WBI Energy will construct 12 pig launcher/receivers, 11 of which will be constructed and operated within the boundaries of a compressor station, receipt and transfer station, or valve setting sites. The remaining pig launcher/receiver (104th Avenue NW pig launcher/receiver) will affect 0.2 acre outside the permanent pipeline right-of-way, which will be retained during operations.

1.2 CONSTRUCTION SCHEDULE AND WORKFORCE

WBI Energy anticipates that construction of the Project will commence in March 2021 for aboveground facilities and May 2021 for the pipeline facilities, subject to the receipt of necessary permits and regulatory approvals. WBI Energy anticipates that construction of the Project facilities will be completed by October 2021, with all facilities being placed into service by November 1, 2021. Based on the current construction schedule, WBI Energy anticipates that construction during winter conditions will not be necessary. However, if a change in the construction schedule necessitates that construction activities occur during the winter months, WBI Energy will file a Winter Construction Plan with FERC for review/approval prior to conducting winter construction activities. Construction activities will generally occur Monday through Saturday from 7:00 a.m. to 7:00 p.m. However, certain activities will occur up to 24 hours per day, including Sundays and potentially federal holidays. These activities will include HDD and guided bore crossings, hydrostatic testing and associated activities, critical tie-ins, operation of pumps associated with a dam-and-pump crossing (if necessary), aboveground facility building construction, installation of compressor units, aboveground facility commissioning, etc. Additionally, certain unforeseen circumstances may require unplanned construction activities outside the typical work hours. These activities may include, but are not limited to, completing in-progress construction activities and wetland/waterbody crossings delayed by an unanticipated event (e.g., severe weather, constructability issues), incident response procedures/measures, and emergency equipment repairs/maintenance.

WBI Energy currently anticipates that construction of the proposed pipelines will be accomplished using a peak temporary workforce of about 450 people and an average workforce of about 350 people, including inspection crews. Pipeline construction will occur using three construction spreads and an average temporary workforce of 250 people, including inspection crews. Construction of the compressor stations will require an average of about 75 additional people. An estimated 20 additional temporary employees will be required to construct and upgrade various delivery, receipt, and transfer stations. Once construction of the Project is complete, WBI Energy anticipates hiring four new employees to assist in operation and maintenance of the new facilities. Additional information regarding construction and permanent workforce requirements is provided in Resource Report 5.

1.3 CONSTRUCTION AND RESTORATION PROCEDURES

WBI Energy proposes to conduct Project activities in accordance with the FERC Plan and Procedures with the exception of the proposed modifications to section IV.A.2 of the FERC Plan and sections V.B.2 and VI.B.I of the FERC Procedures (see table 1.3-1).

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TABLE 1.3-1

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Wetland and Waterbody Construction and Mitigation Procedures**

Plan or Procedures/ Section No.	Measure	Proposed Modification	Justification for Proposed Modification	Protection Measure
Plan				
IV.A.2	The construction right-of-way width for a project shall not exceed 75 feet.	For the 24-inch-diameter Tioga-Elkhorn Creek and Elkhorn Creek-Northern Border pipelines, WBI Energy requests use of a 100-foot-wide construction right-of-way in non-wetland areas except across USFS land.	Additional workspace is necessary to accommodate construction of the 24-inch-diameter pipelines due to steep/rolling terrain along portions of the pipeline route, an increased amount of subsoil materials requiring additional storage space, erosive soil conditions, and to allow for efficient and safe construction.	WBI Energy will adhere to all erosion and sediment control requirements outlined in the FERC Plan and Procedures and follow the measures outlined in the Project Spill Prevention, Control, and Countermeasure Plan (SPCC Plan). To aid in revegetation efforts, WBI Energy will segregate topsoil in all non-saturated areas affected by standard pipeline construction and not just those areas required by the FERC Plan.
Procedures				
V.B.2 ^a	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.	Locate workspace at MP 30.2 of the Tioga-Elkhorn Creek pipeline within 50 feet of the water's edge.	The workspace on the northeast side of Tobacco Garden Creek is necessary to cross the waterbody by guided bore; the workspace is about 34 feet from the waterbody. The guided bore crossing of Tobacco Garden Creek will minimize impacts on the waterbody.	WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the waterbody. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect waterbodies from potential spills.
VI.B.1	Locate all extra work areas (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.	Locate workspace at MP 52.5 of the Tioga-Elkhorn Creek pipeline within 50 feet of an emergent wetland. Locate two workspaces at MP 0.8 of the Line Section 25 Loop within 50 feet of an emergent wetland.	This workspace on the south side of Cherry Creek is necessary to facilitate a guided bore crossing of this waterbody; the workspace is about 27 feet from the wetland. The guided bore crossing of Cherry Creek will minimize impacts on the waterbody. These workspaces are necessary to facilitate a guided bore crossing of the wetland. Space is limited in this area due to engineering and environmental constraints. The workspaces are about 33 and 39 feet from the	WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills. WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal

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Plan or Procedures/ Section No.	Measure	Proposed Modification	Justification for Proposed Modification	Protection Measure
			wetland. Use of the guided bore crossing method will minimize impacts on the wetland.	Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
	Locate workspace at MP 1.0 of the Line Section 25 Loop within 50 feet of an emergent wetland.	This workspace on the north side of 69 th Street NW is necessary to facilitate a guided bore crossing of this road; the workspace is about 4 feet from the wetland. The guided bore crossing of 69 th Street NW will minimize impacts on the road.		WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
	Locate workspace at MP 14.8 of the Line Section 25 Loop within 50 feet of an emergent wetland.	The workspaces on the east side of the wetland and 100 th Avenue NW are necessary to facilitate the guided bore crossing of this road and wetland; the workspace is about 29 feet from the wetland. Use of the guided bore crossing method will minimize impacts on the wetland.		WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
	Locate workspace at MP 16.2 of the Line Section 25 Loop within 50 feet of an emergent wetland.	The workspaces on the west side of the wetland and 99 th Avenue NW are necessary to facilitate the guided bore crossing of this road and wetland; the workspace is about 39 feet from the wetland. Use of the guided bore crossing method will minimize impacts on the wetland.		WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.

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TABLE 1.3-1

**North Bakken Expansion Project
 Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan and
 Wetland and Waterbody Construction and Mitigation Procedures**

Plan or Procedures/ Section No.	Measure	Proposed Modification	Justification for Proposed Modification	Protection Measure
		Locate workspace at MP 0.4 of the Tioga Compressor Lateral within 50 feet of an emergent wetland.	The workspace on the west side of 103rd Avenue NW is necessary to cross the road by guided bore; the workspace is about 5 feet from a wetland.	WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
		Locate workspace at uprate bore site 3 within 50 feet of an emergent wetland.	The workspace on the south side of 92nd Street NW is necessary to cross the road by guided bore; the workspace is about 45 feet from the wetland.	WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
		Locate workspace at uprate bore site 4 within 50 feet of an emergent wetland.	The workspace on the north side of 93rd Street NW is necessary to cross the road by guided bore; the workspace is about 33 feet from the wetland.	WBI Energy will install erosion and sediment control devices in accordance with the FERC Plan and Procedures to prevent sediment from entering the wetland. Additionally, WBI Energy will implement the measures outlined in the Project SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to protect wetlands from potential spills.
<p>^a There are three waterbodies (MPs 12.2, 30.3, and 44.8) where workspaces are currently between 47 and 49 feet from the waterbody. WBI Energy will fence off and not use the portion of the workspaces within 50 feet of these waterbodies.</p>				

1.3.1 General Pipeline Construction Procedures

1.3.1.2 Clearing and Grading

Prior to beginning ground-disturbing activities, WBI Energy’s contractor will coordinate with the North Dakota One-Call system to have existing underground utilities (i.e., cables, conduits, and pipelines)

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identified and flagged. Once this process is complete, a clearing crew will clear the work area of vegetation and other obstacles, including trees (if necessary), stumps, logs, brush, and rocks. If tree removal is required, to the extent feasible, WBI Energy will minimize tree removal during construction. Cleared vegetation and stumps will be chipped (except in wetlands), put to beneficial use such as mulch for erosion control, or hauled offsite to a commercial disposal facility. As needed, snow will be plowed to the edge of the construction right-of-way and stockpiled.

Following clearing (and snow removal as necessary), the construction right-of-way and ATWS will be graded where necessary to provide a level work surface to allow safe passage of construction equipment and emergency vehicles. Topsoil will be segregated in accordance with the FERC Plan and Procedures. If the ground is relatively flat and does not require topsoil segregation or grading, rootstock will be left in the ground to facilitate restoration of the right-of-way. In areas disturbed by grading, and as required by the FERC Plan and Procedures, temporary erosion and sediment controls will be installed within the right-of-way to minimize erosion. These erosion and sediment controls will be inspected and maintained throughout the construction and restoration phases of the Project, as appropriate, and as required by the FERC Plan and Procedures.

Where portions of the temporary and permanent rights-of-way overlap along the collocated segments of the Tioga-Elkhorn Creek pipeline (MPs 0.0 to 2.8) and the Line Section 30 Loop (MPs 6.8 to 9.6), WBI Energy anticipates that topsoil will be segregated across the entire width of both rights-of-way. Construction of the pipelines will then be staggered so that one pipeline is in place and backfilled prior to construction of the other pipeline to allow sufficient workspace for construction of each pipeline.

1.7 NON-JURISDICTIONAL FACILITIES

At the Tioga Compressor Station, the existing electric supply and rural water supply will be sufficient to support the compressor station modifications, and no additional interconnects for these services will be required.

At the Elkhorn Creek Compressor Station, electric service will be obtained from McKenzie Electric Cooperative. Power will be supplied from the overhead powerline that crosses the southern portion of the tract, and all ground disturbance will be within the facility workspace. Water for potable water and cleaning needs will be provided by McKenzie County Water Resource District. The service is anticipated to come from an existing 6-inch-diameter water line. A 2-inch-diameter poly line will run from the new compressor station to the existing water line, which is located in an easement that abuts the southern portion of the station tract (see the Elkhorn Creek Compressor Station plot plan in appendix 1E and [filed under separate cover in Volume III of WBI Energy's FERC Application as CUI//CEII]).

Only one aboveground facility has planned interconnecting facilities that could be considered non-jurisdictional. In order to connect to the proposed Tioga Plant Receipt Station, Hess will need to build an approximately 900 foot, 20-inch-diameter lateral from their existing plant in Tioga, across 68th Street NW, to the Tioga Plant Receipt Station.

Existing third-party utility services will be used at the existing delivery, receipt, and transfer stations. At the new Norse Transfer Station and Northern Border Interconnect, taps will be installed to connect to the existing utilities. No new non-jurisdictional service lines will be required to bring utilities to these areas.

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1.8 PERMITS AND APPROVALS

WBI Energy will ensure that all necessary permits, clearances, and licenses for Project construction and operation are obtained by the time required prior to construction. Table 1.8-1 lists the federal and state environmental permits and approvals required to construct and operate the Project, along with the status of each permit or approval. In each case, WBI Energy has initiated the permitting or approval process through agency contacts and consultations. A summary of agency contacts and copies of agency correspondence to date are provided in appendix 1G. Appendix 1G-1 contains public information, and appendix 1G-2 contains sensitive information that has been filed under separate cover in Volume IV as Controlled Unclassified Information/Privileged and Confidential (CUI//PRIV).

TABLE 1.8-1			
North Bakken Expansion Project Environmental Permits, Approvals, and Consultations			
Agency	Permit/Approval/Consultation	Anticipated Submittal Date	Anticipated Approval Date
Federal			
FERC	Certificate under Section 7(c) of the Natural Gas Act	February 2020	February/March 2021
U.S. Army Corps of Engineers – Omaha District	Issuance of a Section 404 permit for discharges of dredged or fill material into waters of the United States, including jurisdictional wetlands	Initial 408 and 404 Applications submitted February 2020	February/March 2021
and			
U.S. Army Corps of Engineers – Garrison Project Office	Issuance of a Section 408 permit for projects that impact (i.e., modify or occupy) any U.S. Army Corps of Engineers-constructed public works projects that include dams, basins, levees, channels, navigational channels, or other local flood protection works	Revised Applications August 2020 (408) and September 2020 (404)	
	Clearance to work on any U.S. Army Corps of Engineers-controlled property		
	Issuance of a Section 10 permit for structures or work in or affecting navigable Waters of the United States		
U.S. Fish and Wildlife Service – Region 6 – North Dakota Field Office	Consultations for impacts on federally listed threatened and endangered species and critical habitat under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, the Bald and Gold Eagle Protection Act, and the Fish and Wildlife Coordination Act	Initial Application February 2020	December 2020
and			
U.S. Fish and Wildlife Service Crosby Wetland Management District	Consultation for impacts on federal conservation easements for grasslands and wetlands		
U.S. Department of the Interior, Bureau of Land Management - Eastern Montana/Dakotas District Office	Coordination of National Environmental Policy Act process when more than one federal land management agency's lands are crossed. The U.S. Bureau of Land Management is responsible for issuing right-of-way over lands managed by two or more federal agencies	Initial Application February 2020	February/March 2021
		Revised Application September 2020	

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TABLE 1.8-1			
North Bakken Expansion Project Environmental Permits, Approvals, and Consultations			
Agency	Permit/Approval/Consultation	Anticipated Submittal Date	Anticipated Approval Date
U.S. Forest Service – Dakota Prairie Grasslands Little Missouri National Grassland	Consultation to cross USFS Lands and issuance of a Special Use Permit through the U.S. Bureau of Land Management right-of-way process.	Initial Application February 2020 Revised Application September 2020	February/March 2021
U.S. Department of Agriculture, Natural Resources Conservation Service – North Dakota	Consultations regarding erosion and sedimentation controls and seed mixes, and Agricultural Conservation Easement Program	Ongoing	December 2020
Advisory Council on Historic Preservation	Consultation under Section 106 of the National Historic Preservation Act if the Project would affect historic properties	-	-
North Dakota			
North Dakota Department of Health, Division of Air Quality	Permits to Construct an Air Contaminant Source –Tioga Compressor Station and Elkhorn Creek Compressor Station	Initial Applications February 2020 Revised Application for Tioga Compressor Station July 2020	Permit to Construct for Elkhorn Compressor Station Received March 2020. Anticipated permit for Tioga in November 2020
	Permits to Operate – Tioga Compressor Station and Elkhorn Creek Compressor Station	Between October 2021 and October 2022	Between January 2022 and January 2023
North Dakota Department of Health, Division of Water Quality	General Permit for Construction Stormwater Discharge under the National Pollutant Discharge Elimination System General Permit for Construction Dewatering and Discharge of Hydrostatic Test Water under the National Pollutant Discharge Elimination System	October/November 2020	January 2021
	Water Quality Certificate under Section 401 of the Clean Water Act	Initial Application February 2020 Revised Application September 2020	February/March 2021
North Dakota State Water Commission	Navigable Water Crossing Permit under North Dakota Century Code Chapter 61-33 (Sovereign Lands)	Initial Application February 2020 Revised Application August 2020	November 2020
	Temporary Water Permit – Water appropriation permit for withdrawals associated with hydrostatic test water and drilling mud	October/November 2020	January 2021

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TABLE 1.8-1			
North Bakken Expansion Project Environmental Permits, Approvals, and Consultations			
Agency	Permit/Approval/Consultation	Anticipated Submittal Date	Anticipated Approval Date
North Dakota Department of Game and Fish	Consultation for impacts on fisheries and wildlife	February 2020	March 2020
North Dakota Parks and Recreation Department	Consultation under the North Dakota Natural Heritage Program	June 2019	May 2020
State Historical Society of North Dakota	Consultation for impacts on historic properties under Section 106 of the National Historic Preservation Act	February 2020	January 2021
North Dakota State Lands Board	Right-of-Way Grant to cross state lands	November 2020	December 2020

1.9 AFFECTED LANDOWNERS AND OTHER STAKEHOLDERS

The names and addresses of all affected landowners as specified in 18 CFR 157.6(d) are listed in appendix 1H (filed under separate cover in Volume IV as CUI//PRIV). WBI Energy has notified each of the landowners identified on the list of the proposed Project. As required by section 157.6(d), WBI Energy will make a good faith effort to again notify each affected landowner once the Commission issues a notice of WBI Energy’s application.

No new landowners will be affected by any of the minor route variations that have been incorporated into the Project since the February 14, 2020 FERC Application. If incorporated into the proposed Project route, the Tioga East and Tioga West Alternatives described in section 10.6.2 of Resource Report 10 would affect one new landowner and a portion of land owned by a previously affected landowner. See Appendix 1H-A (filed under separate cover in Volume IV as CUI//PRIV) for a correspondence record of communications with this new landowner.

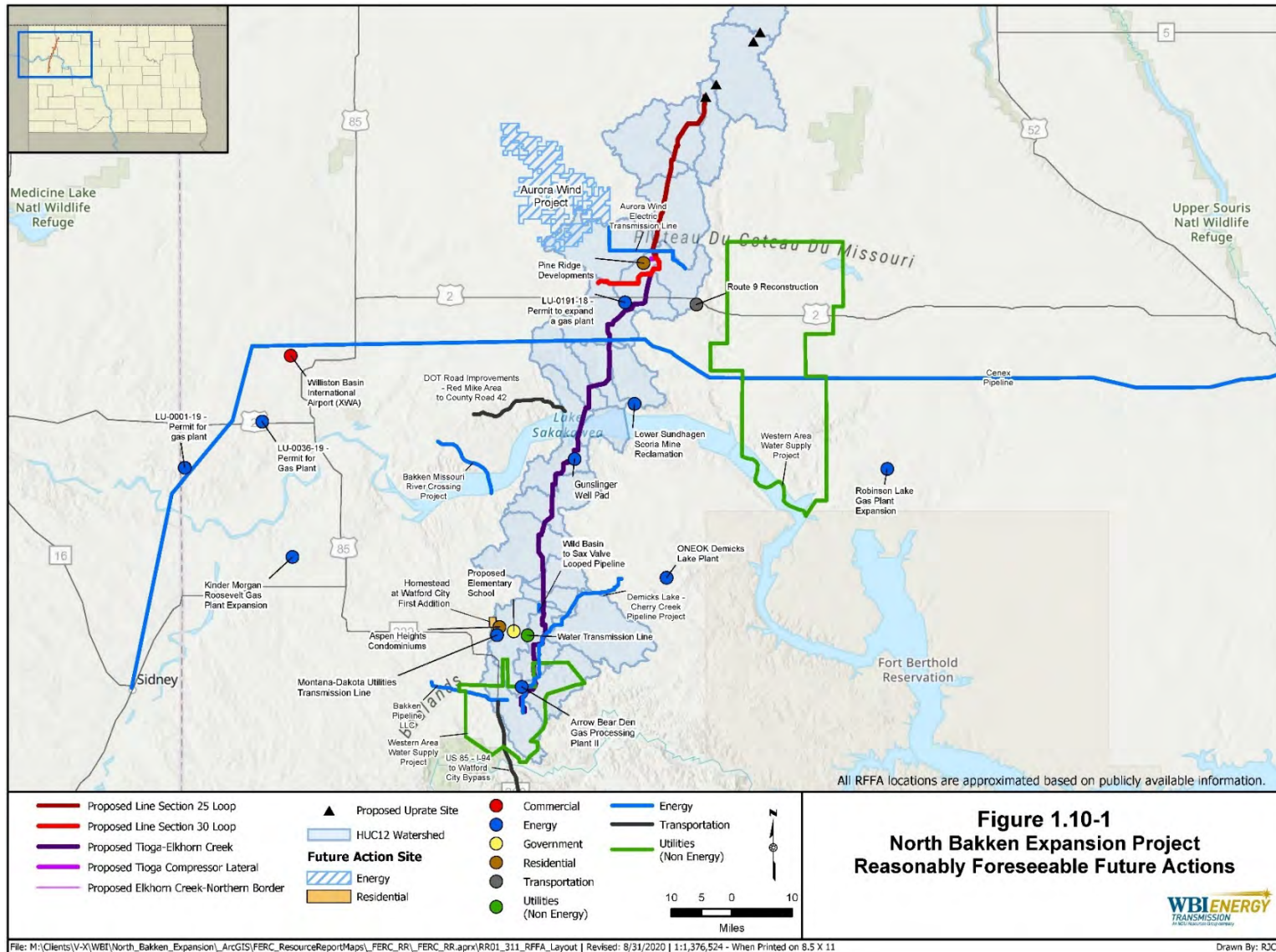
During the Project scoping period, WBI Energy received comment letters regarding the proposed pipeline route and potential Project impacts. WBI Energy has responded to these comments throughout the various resource reports as indicated in the responses to scoping comments summary table in appendix 1I.

1.10 CUMULATIVE IMPACTS

Appendix 1J presents reasonably foreseeable future actions (RFFA) and associated resource impacts considered in the cumulative impacts analysis for the Project. Figure 1.10-1 depicts the locations of RFFAs within the geographic scope for this analysis.

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2.0 UPDATES TO RESOURCE REPORT 2 – WATER USE AND QUALITY

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

2.1 Groundwater Resources

2.1.1 Regional Aquifers

2.1.1.2 Alluvial and Glacial Aquifers

Overlying the bedrock aquifer systems are localized alluvial and glacial aquifers comprised of unconsolidated glacial deposits. Aquifers developed in alluvial and glacial deposits are more sporadically located than bedrock aquifers. Alluvial and glacial aquifers can be separated into four categories: valley-fill aquifers; blanket sand and gravel aquifers; glacial-deposit aquifers; and stream-valley aquifers (U.S. Geological Survey [USGS], 2016). Aquifers developed in alluvial and glacial deposits are less continuous aquifers compared to bedrock aquifers. These aquifers are composed of more recent alluvial and glacial deposits comprised of loose beds of gravel, sand, silt, and/or clay resulting from glacial outwash deposits, and they are generally more productive and of better water quality than aquifers found in the underlying bedrock (North Dakota State Water Commission [NDSWC], 2005; Paulson, 1983).

Water quality in the alluvial and glacial aquifers is generally less mineralized than in the underlying bedrock aquifers; generally, the deeper the aquifer the less saline the water. The dissolved-solids concentration in the unconsolidated aquifers is commonly less than 1,000 milligrams per liter although in some places the water is very hard and may also be high in iron and manganese. Generally, these upper aquifers are suitable for irrigation, but there are local exceptions based on water quality, soil type, and the crop being irrigated (Paulson, 1983).

The proposed Tioga-Elkhorn Creek pipeline route crosses three alluvial and glacial aquifers for a distance of approximately 9.3 miles in portions of McKenzie and Williams Counties (see table 2.1.1-1). No alluvial and glacial aquifers are crossed by the proposed Project within Mountrail or Burke Counties.

The Hofflund aquifer consists of a glacialfluvial deposit of sand and gravel overlain by alluvial sand, gravel, silt, and clay. The average aquifer thickness is approximately 45 feet. The depth to the top of the aquifer ranges from 10 to over 100 feet below the ground surface (Armstrong, 1969).

The Tobacco Garden aquifer consists of a bed of alluvial material deposited along the floor of the pre-glacial Little Missouri valley. The maximum aquifer thickness ranges from 80 to 99 feet. The depth to the top of the aquifer ranges from approximately 50 to 1,000 feet below the ground surface (Croft, 1985).

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Figure 2.1.1-1
 North Bakken Expansion Project
 Regional Aquifers

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TABLE 2.1.1-1				
North Bakken Expansion Project Areas Underlain by Regional Aquifers ^a				
Facility/County	Aquifer Name	Approximate Start Milepost	Approximate End Milepost	Miles Crossed
Tioga-Elkhorn Creek Pipeline				
Williams County	Hofflund	19.6	22.4	2.8
Williams County	Hofflund	22.4	23.2	0.8
McKenzie County	Tobacco Garden	29.6	31.3	1.7
McKenzie County	Tobacco Garden	31.8	32.2	0.4
McKenzie County	Tobacco Garden	32.3	32.4	<0.1
McKenzie County	Tobacco Garden	36.4	37.3	0.9
McKenzie County	Tobacco Garden	39.8	40.2	0.4
McKenzie County	Cherry Creek	46.8	48.6	1.8
McKenzie County	Cherry Creek	52.4	52.8	0.4
McKenzie County	Cherry Creek	55.0	55.1	0.1
TOTAL				9.3
Source: North Dakota Department of Environmental Quality (NDDEQ), 2019b				
^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.				

The Cherry Creek aquifer consists of a glacialfluvial deposit of sand and gravel underneath the portion of Cherry Creek southeast of Watford City, North Dakota. The maximum aquifer thickness is approximately 100 feet (Croft, 1985). The depth to the top of the aquifer ranges from approximately 6 to 30 feet below the ground surface (USGS, 2019).

In addition to the named alluvial and glacial aquifers, potable and domestic use water is obtainable in some places from unnamed and unconsolidated aquifers that consist of thin beds of sand and gravel that seem to have a random distribution both vertically and laterally (Paulson, 1983). Well yields from these minor aquifers are generally less than 10 gallons per minute; however, these aquifers occur in sufficient quantities to produce adequate yields for domestic needs for many farmsteads in the area (Paulson, 1983).

Water quality in the unconsolidated glacial aquifers is generally less mineralized than in the underlying bedrock aquifers. Generally, the deeper the aquifer the more saline the water. The dissolved-solids concentration in the unconsolidated aquifers is commonly less than 1,000 milligrams per liter, although in many places the water is very hard and may also be high in iron and manganese. However, the upper aquifers are less reliable sources for development than the deeper aquifers. Despite the less reliable source potential, most farms and ranches and many small communities are able to obtain sufficient quantities of water for most purposes from these aquifers (Paulson, 1983).

2.1.3 Public and Private Water Supply Wells

Ninety-four percent of the incorporated communities in the state rely on groundwater for private wells, municipal distribution systems, or rural water systems. Groundwater is effectively the sole source of all water used by farm families and residents of small communities having no public water distribution system (NDSWC, 2005). In North Dakota, approximately 86 percent of residents receive their drinking water from a public water system. A public water system is defined as “a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an

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average of at least 25 people for at least 60 days each year” (North Dakota Department of Environmental Quality [NDDEQ], 2019a).

The NDDEQ oversees the Source Water Protection Program, which was developed in response to the 1996 Safe Drinking Water Act amendments that require all states to define and assess the source waters of public water systems (groundwater and surface water). All public water systems that have wells or intakes are participants in this program (NDDEQ, 2019a). The Source Water Protection Program has three mandatory program elements for public water systems: (1) the delineation of a wellhead protection area (WHPA) or source water protection area based on existing hydro-geologic and geologic information; (2) a contaminant source inventory that 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, 2019a).

WHPAs are delineated zones around public water well(s) based on existing hydro-geologic and geologic information to reduce the susceptibility to contamination. Further, to protect the water quality of these wells, the exact locations of the public water supply wells within WHPAs are not provided by the NDDEQ. Based on maps prepared by the NDDEQ, WBI Energy determined no WHPAs are crossed by the Project and no WHPAs are located within 0.25 mile of the construction workspace (NDDEQ, 2019b). Therefore, no public water supply wells are located within 150 feet of pipeline construction workspaces.

WBI Energy reviewed the NDSWC well permit database and online map system to evaluate the potential presence of wells within 150 feet of the Project footprint. This review determined that based on the data available no water supply wells exist adjacent to the proposed pipeline routes (NDSWC, 2019). WBI Energy also recorded the location of private wells identified during civil surveys and through landowner interviews. One private livestock watering well was identified within 150 feet of the proposed Project footprint. This well is about 30 feet from milepost (MP) 25.9 of the Tioga-Elkhorn Creek pipeline.

WBI Energy reviewed USGS topographic maps and worked with landowners to determine if any springs are within 150 feet of Project workspaces. Based on conversations with landowners, two springs were identified near MP 12.2 of the Tioga-Elkhorn Creek pipeline. The exact location of these springs are not currently known; however, WBI Energy will coordinate with the landowners to identify these springs prior to construction. If these springs are within 150 feet of the proposed workspace, WBI Energy will clearly demarcate the spring using orange construction fencing. No blasting is anticipated to be required for the Project; therefore, impacts on springs are not anticipated.

2.1.4 Contaminated Groundwater

The primary potential sources of groundwater contamination in the vicinity of the Project are related to agricultural activities, including the leaching of pesticides, herbicides, and fertilizers into underlying aquifers. Other possible sources of groundwater contamination in the area include cattle feedlots, municipal landfills, septic tanks, sewage lagoons, oil wells, and leaking underground storage tanks (Paulson, 1983). Based on a review of recent aerial photographs and 2019/2020 field surveys, WBI Energy did not identify any livestock feedlots, municipal landfills, or sewage lagoons within 0.25 mile of the construction workspace. In addition, a review of the EPA’s Facility Registration System map service and the NDDEQ underground storage tank data identified no known sites of potential contamination within 500 feet of the Project area (NDDEQ, 2019c). As discussed in section 8.6, WBI Energy reviewed the EPA’s EnviroFacts

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Website as well as an EPA dataset for landfills to identify hazardous waste sites, landfills, or other sites with potential for soil or groundwater contamination within 0.25 mile of the Project.

On-site septic systems are the primary form of wastewater treatment in rural North Dakota; however, it is unlikely that septic systems will be affected by the Project. WBI Energy preferentially routed the pipeline facilities to avoid residences, thereby avoiding potential impacts on farm and ranch septic systems. The pipeline routes will pass within 500 feet of residences in 11 locations near MPs 22.5, 23.1, 28.2, 30.0, 30.5, and 39.2 of the Tioga-Elkhorn Creek pipeline; MPs 8.0, 10.9, 11.5, and 19.3 of the Line Section 25 Loop; and MP 5.1 of the Line Section 30 Loop. In all instances, the pipelines will be greater than 350 feet from the nearest farmstead or residence. WBI Energy does not anticipate that construction activity will affect active septic systems; however, WBI Energy will coordinate with the landowners in these 11 locations during construction to ensure no impacts occur. In the unforeseen instance that an active septic system is impacted by Project construction, WBI Energy will repair the system to its previous condition or better.

2.1.5 Groundwater Construction Impacts and Mitigation

The potential for impacts on groundwater resulting from construction and operation of the proposed Project facilities is a function of the degree to which the proposed facilities would cause localized changes to existing groundwater flow paths that could result from soil compaction. Permanent effects could also occur to groundwater recharge as a result of the development of impervious surfaces and structures at the proposed aboveground facility sites. The proposed new Elkhorn Creek Compressor Station and proposed new delivery, receipt, and transfer stations will have buildings with roofs that will reduce the area of direct infiltration and recharge below the structure, but runoff from the roofs would still eventually be conveyed to pervious surfaces that would provide groundwater recharge. A new stormwater detention facility is currently planned for the expansion of the Tioga Compressor Station. Additional stormwater facilities will be added as necessary at the other new and modified aboveground facilities to comply with state and local stormwater requirements. The overall effect to groundwater recharge resulting from facility construction will not be significant due to the relatively small footprint of impervious surfaces in relation to the total potential recharge area.

Construction of the proposed pipelines will generally require a trench excavation of about 6 feet (or deeper at crossings of some roads, utilities, foreign pipelines, and waterbodies). Dewatering of the pipeline trench will be necessary if shallow groundwater is encountered within the excavation zone. Water pumped from the trench or excavated areas will be discharged in accordance with Federal Energy Regulatory Commission's (FERC) *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) and applicable permits. The potential impact of dewatering will be minimized by discharging the pumped water to well-vegetated areas or properly constructed temporary retention structures that will promote infiltration and minimize or eliminate runoff. Because trenching typically proceeds at a relatively rapid rate, and depression of the local water table around the trench is expected to recover quickly once the trench is backfilled, it is anticipated that any impacts associated with pipeline trenching will be temporary and that surface groundwater will return to preconstruction conditions after construction.

Backfill placed within the pipeline trench may temporarily be more permeable than the surrounding soil and rock substrate until the natural pore structure of the backfilled soils is reestablished through tamping or compaction during backfill. As a result, the trench could act as a preferential pathway for groundwater flow in areas where it intersects the water table and potentially alter the existing groundwater flow patterns within shallow saturated zones. WBI Energy will install trench breakers at specified intervals in accordance with FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and Procedures, and in

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areas determined by WBI Energy and its environmental inspectors to reduce the potential for the trench to act as a preferential groundwater flow path.

Soil compaction from construction has the potential to affect groundwater recharge. WBI Energy will implement measures documented in FERC's Plan and the Project-specific construction plans to minimize compaction during construction, and to identify and mitigate areas that may have been compacted. Measures that may be taken, as necessary to minimize soil compaction include the use of timber mats for heavy equipment and soil ripping to increase porosity in soils that are significantly compacted due to construction activities.

Accidental spills and leaks of hazardous materials could cause impacts on groundwater resources through the introduction of contaminants, especially in highly permeable soils near wells. WBI Energy will implement the spill prevention and control measures identified in both its *Spill Prevention, Control, and Countermeasure Plan* (SPCC Plan), which is included in appendix 1F of Resource Report 1, and in the FERC Procedures. In addition, WBI Energy will implement the procedures outlined in its *Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan* (HDD Plan), which is included as appendix 1F of Resource Report 1, to mitigate potential impacts of drilling fluid from horizontal directional drill (HDD) and guided bore operations. No areas containing contaminated groundwater or hazardous waste sites have been identified along the proposed Project route. If contaminated soils are encountered, WBI Energy will implement measures identified in its *Plan for Unanticipated Discovery of Contaminated Environmental Media*, which is included in appendix 1F of Resource Report 1. The *Plan for Unanticipated Discovery of Contaminated Media* describes measures for containing and characterizing contaminated media, notifying the landowner and appropriate regulatory agencies of the contamination, and responding to the contaminated media.

As mentioned in section 2.1.3 above, WBI Energy identified one private livestock watering well within 150 feet of the proposed Project footprint. This well is about 30 feet from MP 25.9 of the Tioga-Elkhorn Creek pipeline. Additionally, two springs were identified near MP 12.2 of the Tioga-Elkhorn Creek pipeline. For active wells and springs within 150 feet of construction work areas, WBI Energy will conduct preconstruction and post-construction water quality and yield testing and/or sampling to verify that construction of the Project does not permanently affect water wells or springs. WBI Energy will obtain landowner or municipality permission prior to testing. WBI Energy will analyze any damaged well or water supply system and perform the necessary repairs and/or modifications to return it to its former capacity as determined by the testing and/or sampling. In the event that a private well or water supply system is damaged beyond repair due to construction-related activities, WBI Energy will provide for a temporary water source and replace the well as necessary. Within 1 year of the completion of construction, WBI Energy will file a report identifying all potable water supply systems damaged by construction and how they were repaired. In addition, in the event that an active well is identified within construction work areas and must be taken out of service, WBI Energy will provide an alternate water source or negotiate a mitigation plan with the landowner to offset any adverse impacts.

No blasting activities are anticipated during construction of the proposed Project; therefore, no adverse effects due to blasting on groundwater associated with water wells, springs, and wetlands are expected.

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2.2 Surface Water Resources

2.2.1 Waterbodies Crossed

The Project lies within the Missouri River watershed. Two sub-basins within the Project area are crossed: Lower Little Missouri River (Hydrologic Unit Code [HUC] 10110205) and Lake Sakakawea (HUC 10110101). Table 2.2.1-1 provides a summary of the HUC-12 watersheds crossed by project facilities.

Based on review of USGS mapping, aerial photography, and field investigations conducted on properties where permission to survey was granted in 2019, the Project will have 22 waterbody crossing locations consisting of 11 perennial stream crossings, 6 intermittent stream crossings, 2 ephemeral stream crossing, and 3 open water pond crossings. Of the 22 waterbody crossings, 2 waterbodies (s-wm-ea-001p and s-wm-ea-002) are crossed by both the Tioga-Elkhorn Creek Pipeline and Line Section 30 Loop at the same location. The waterbody and wetland delineation report for the Project is included as appendix 2A. The reduction in waterbody crossings since the filing of the February 14, 2020 FERC Application is due to continued field efforts in areas that were previously unsurveyed. In many instances, waterbodies that were previously identified using NHD data were confirmed to be non-water points or wetlands.

FERC defines waterbodies as “any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as lakes and ponds” (FERC, 2013). Perennial waterbodies are expected to contain water and flow for most of the year. Intermittent streams include those that flow seasonally, and ephemeral streams include those that flow only as a result of precipitation events. FERC further categorizes surface waters as major, intermediate, or minor waterbodies based on the width of the water’s edge at the time of crossing. Major waterbodies are equal to or greater than 100 feet in width, intermediate waterbodies are greater than 10 feet but less than 100 feet in width, and minor waterbodies are 10 feet or less in width. Based on the field surveys and desktop review of areas where survey access was not available, the Project crosses 1 major waterbody (Missouri River/Lake Sakakawea), 10 intermediate waterbodies, and 9 minor waterbodies.

The portion of Missouri River/Lake Sakakawea crossed by the Project is considered a Section 10 navigable water under the Rivers and Harbors Act.

Table 2.2.1-2 provides a list of the waterbodies crossed by the proposed pipeline routes by Project milepost, and includes the field survey designation (feature ID), USGS waterbody name, water quality classification, flow regime (intermittent, ephemeral, or perennial), approximate crossing width, and proposed construction crossing method.

Waterbodies that were not surveyed due to a lack of survey permission are referred to in the Feature ID column of table 2.2.1-2 as National Hydrography Dataset (NHD); waterbody characteristics for these features are based on the NHD and/or recent aerial photography. Water quality classifications for the waterbodies along the pipeline routes are described in section 2.2.2 of this resource report. Construction crossing methods and related mitigation measures are further described in sections 2.2.6 and 2.2.7. A description of fishery resources associated with the streams listed in table 2.2.1-2 is provided in section 3.1.3 of Resource Report 3.

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Table 2.2.1-1				
North Bakken Expansion Project				
Summary of HUC-12 Watersheds Crossed by Project Facilities ^{a, b}				
Facility	HUC-12 Watershed(s)	Milepost In	Milepost Out	Crossing Length
Pipeline Rights-of-Way				
Tioga-Elkhorn Creek	Tioga Municipal Airport-Paulsen Creek	0.00	1.96	1.96
	Town of Tioga	1.96	7.70	5.75
	Middle Beaver Creek	7.70	13.07	5.36
	Lower Beaver Creek	13.07	13.46	0.40
	Lower Dry Fork Creek	13.46	14.47	1.01
	Lower Beaver Creek	14.47	15.08	0.61
	Lower Dry Fork Creek	15.08	15.08	<0.01
	Lower Beaver Creek	15.08	19.24	4.15
	Nelson Creek	19.24	22.35	3.11
	Red Mike Hill-Missouri River	22.35	26.03	3.68
	Lower Tobacco Garden Creek	26.03	34.51	8.48
	Middle Tobacco Garden Creek	34.51	38.31	3.79
	Upper Tobacco Garden Creek	38.31	44.47	6.16
	Timber Prong Creek	44.47	46.44	1.97
	101101010801	46.44	47.55	1.11
	Watford City-Cherry Creek	47.55	48.25	0.70
	Sevenmile Creek-Cherry Creek	48.25	51.31	3.06
	Northfork Creek	51.31	51.92	0.61
	Sevenmile Creek-Cherry Creek	51.92	57.34	5.42
	Elkhorn Creek-Cherry Creek	57.34	57.56	0.22
	Sevenmile Creek-Cherry Creek	57.56	57.62	0.06
	Elkhorn Creek-Cherry Creek	57.62	61.25	3.62
	Spring Creek	61.25	62.77	1.52
Elkhorn Creek-Northern Border	Spring Creek	0.00	0.29	0.29
Line Section 25 Loop	Tioga Municipal Airport-Paulsen Creek	0.00	1.21	1.21
	Tioga Dam	1.21	1.45	0.24
	Tioga Municipal Airport-Paulsen Creek	1.45	1.85	0.40
	Beauty Valley-Paulsen Creek	1.85	9.49	7.63
	Upper White Earth Creek	9.49	11.64	2.16
	Middle White Earth Creek	11.64	18.18	6.54
	Lower White Earth Creek	18.18	20.32	2.14
Line Section 30 Loop	Middle Beaver Creek	0.00	0.53	0.53
	Tioga Dam	0.53	1.32	0.79
	Middle Beaver Creek	1.32	1.53	0.21

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Table 2.2.1-1				
North Bakken Expansion Project				
Summary of HUC-12 Watersheds Crossed by Project Facilities ^{a, b}				
Facility	HUC-12 Watershed(s)	Milepost In	Milepost Out	Crossing Length
	Tioga Dam	1.53	2.21	0.68
	Town of Tioga	2.21	2.24	0.03
	Tioga Dam	2.24	2.35	0.10
	Town of Tioga	2.35	7.62	5.27
	Tioga Municipal Airport-Paulsen Creek	7.62	9.55	1.93
Tioga Compressor Lateral	Town of Tioga	0.00	0.47	0.47
Uprates to Line Section 25	Lower White Earth Creek / Smishek Lake / Black Slough	N/A	N/A	N/A
Staging Areas				
68th Street Yard	Tioga Dam	N/A	N/A	N/A
Boehm Staging Yard	Lower Tobacco Garden Creek	N/A	N/A	N/A
CRS Yard	Tioga Dam	N/A	N/A	N/A
Delta Contractors Yard	Spring Creek / Watford City-Cherry Creek	N/A	N/A	N/A
Enget Yard	Beauty Valley-Paulsen Creek	N/A	N/A	N/A
Flatlands Yard 1	Lower Tobacco Garden Creek	N/A	N/A	N/A
Flatlands Yard 2	Lower Tobacco Garden Creek	N/A	N/A	N/A
Lobell Yard	Middle Beaver Creek	N/A	N/A	N/A
Schmidt Yard	Middle Beaver Creek	N/A	N/A	N/A
Weflen Staging Yard	Tioga Dam	N/A	N/A	N/A
Franz Yard	Watford City-Cherry Creek	N/A	N/A	N/A
Aux Sable Yard	Tioga Dam / Tioga Municipal Airport- Paulsen Creek	N/A	N/A	N/A
Aboveground Facilities				
Elkhorn Creek Compressor Station (new)	Spring Creek	N/A	N/A	N/A
Tioga Compressor Station (existing)	Tioga Dam / Tioga Municipal Airport- Paulsen Creek	N/A	N/A	N/A
Lignite Plant Receipt Station and Lignite Town Border Station (existing)	Little Slough / Beaver Lake-East Branch Short Creek	N/A	N/A	N/A
Norse Plant Receipt Station (existing)	Lower White Earth Creek	N/A	N/A	N/A
Norse Transfer Station (new)	Lower White Earth Creek	N/A	N/A	N/A
Northern Border Interconnect (new)	Spring Creek	N/A	N/A	N/A
Robinson Lake Plant Receipt Station (existing)	Town of Stanley-Little Knife River	N/A	N/A	N/A
Springbrook Plant Receipt Station (existing)	Brown School-Little Muddy River	N/A	N/A	N/A
Tioga Plant Receipt Station (existing)	Town of Tioga	N/A	N/A	N/A
^a The numbers in this table have been rounded for presentation purposes.				

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TABLE 2.2.1-2						
North Bakken Expansion Project Waterbodies Crossed by the Pipeline Routes ^a						
Approx. Milepost	Feature ID	Waterbody Name ^b	Water Quality Classification ^c	Flow Regime ^d	Width (feet) ^e	Crossing Method ^f
Tioga to Elkhorn Creek						
0.8	s-wm-ea-001p	Unnamed tributary to Paulson Creek	Class III	PN	39	Open Cut
2.4	s-wm-ea-002	Unnamed tributary to Dry Fork Creek	Class III	PN	<10	Open Cut
12.3	s-wm-ee-001	Unnamed tributary to Beaver Creek	Class III	PN	<10	Open Cut
18.2	s-wm-eb-002	Beaver Creek	Class III	PN	<10	Guided Bore
24.4	s-wm-eb-003p	Lake Sakakawea	Class I	PN	12,560	HDD
25.7	o-mk-ee-001	Natural Pond	Class 4	NA	34	HDD
27.1	s-mk-eb-001	Unnamed tributary to Sand Creek	Class III	E	<10	Open Cut
27.5	s-mk-ea-001	Unnamed tributary to Sand Creek	Class III	E	<10	Guided Bore
29.0	s-mk-wa-001	Unnamed tributary to Tobacco Garden Creek	Class III	IT	25	Guided Bore
30.3	s-mk-eb-002	Tobacco Garden Creek	Class III	PN	58	Guided Bore
36.5	s-mk-ea-003	Tobacco Garden Creek	Class III	PN	45	Guided Bore
39.2	s-mk-ea-002	Unnamed tributary to Tobacco Garden Creek	Class III	IT	<10	Open Cut
44.9	DSK_NHD_11 ^g	Timber Prong Creek	Class III	IT	20	Guided Bore
44.9	DSK_NHD_5 ^g	Timber Prong Creek	Class III	IT	32	Guided Bore
51.5	s-mk-eb-005	Northfork Creek	Class III	IT	<10	Guided Bore
52.4	s-lbt-001a	Cherry Creek	Class III	PN	39	Guided Bore
58.0	DSK_NHD_2 ^g	Unnamed tributary to Sevenmile Creek	Class III	IT	<10	Open Cut
Line Section 25 Loop						
13.4	s-bk-eb-001p	White Earth Creek	Class III	PN	28	Guided Bore
Line Section 30 Loop						
7.2 ^h	s-wm-ea-002	Unnamed tributary to Dry Fork Creek	Class III	PN	<10	Open Cut
8.8 ^h	s-wm-ea-001p	Unnamed tributary to Paulson Creek	Class III	PN	38	Open Cut
Tioga Compressor Station						
NA	o-wm-eb-001	Man-made pond ⁱ	Class 4	NA	NA	N/A
Yards						
Enget Yard	o-mt-ee-001	Man-made pond ⁱ	Class 4	NA	NA	N/A
^a Based on the following data: Project field surveys to date, USGS mapping, NHD data, the NDSWC's geographic information system data viewer, and review of aerial photographs. ^b Waterbody names are based on USGS topographic maps. ^c See section 2.2.2 below for category definitions (source: NDDEQ 2019d). None of the Class III streams are specifically identified in the Stream Classifications Table located 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.						

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TABLE 2.2.1-2						
North Bakken Expansion Project Waterbodies Crossed by the Pipeline Routes ^a						
Approx. Milepost	Feature ID	Waterbody Name ^b	Water Quality Classification ^c	Flow Regime ^d	Width (feet) ^e	Crossing Method ^f
^d	Based on field surveys, NHD designations, and/or aerial photography interpretation for unmapped streams: IT = Intermittent PN = Perennial E = Ephemeral (U.S. Army Corps of Engineers [COE], 2012) NA = Not applicable					
^e	Approximate width based on field surveys and/or estimated from aerial photography. Where NHD data have been used to supplement areas where surveys are not complete an assumed <10 feet wide has been used for all intermittent NHD features.					
^f	Open Cut = If the waterbody has no flow at time of construction, the crossing will be installed using the open-cut method. If the waterbody has perceivable flow at the time of construction, the waterbody will be crossed using either the guided bore crossing method or a dry crossing method (flume or dam-and-pump) based on site-specific conditions. Refer to Resource Report 1 section 1.3.2.1 for detailed description of each crossing method.					
^g	Survey permission has not been granted in this area; information provided is based on NHD data.					
^h	Overlaps with the Tioga-Elkhorn Creek pipeline.					
ⁱ	Waterbody consists of a man-made pond to address stormwater permitting requirements at the Tioga Compressor Station. The final location of this pond will likely change after final engineering of the compressor station is complete.					
^j	Waterbody consists of a man-made pond which will be avoided and fenced off during use of the yard.					
^k	Existing culverted crossing					

As noted in table 2.2.1-2, the Project involves a proposed HDD crossing of Lake Sakakawea and associated U.S. Army Corps of Engineers (COE)-managed real estate. Lake Sakakawea is a reservoir created by the Garrison Dam/Lake Sakakawea Project as part of the Missouri River Mainstem Reservoir System authorized under the Flood Control Act of 1944 (Public Law 78-534) and managed by the COE. The Garrison Dam/Lake Sakakawea Project provides for the following congressionally authorized purposes: flood control; navigation; irrigation; hydropower; water quality; municipal and industrial water supply; fish and wildlife; and recreation (COE, 2018).

2.2.2 Water Quality and Contaminated Sediments

The NDDEQ classifies waterbodies into categories based on water quality, flow regime, and beneficial uses. Streams are classified according to four categories (NDDEQ, 2019d):

- “Class I streams – The quality of the waters in this class shall be suitable for the propagation or protection, or both, of resident fish species and other aquatic biota and for swimming, boating, and other water recreation. The quality of the waters shall be suitable for irrigation, stock watering, and wildlife without injurious effects. After treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the water quality shall meet the bacteriological, physical, and chemical requirements of the department for municipal or domestic use.
- Class IA streams – The quality of the waters in this class shall be the same as the quality of class I streams, except that where natural conditions exceed class criteria for municipal and domestic use, the availability of softening or other treatment methods may be

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considered in determining whether ambient water quality meets the drinking water requirements of the department.

- Class II streams – The quality of waters in this class shall be the same as the quality of class I streams, except that additional treatment may be required to meet drinking water requirements of the department. Streams in this classification may be intermittent in nature, which would make these waters of limited value for beneficial uses such as municipal water, fish life, irrigation, bathing, or swimming.
- Class III streams – The quality of the waters in this class shall be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading) fish and aquatic biota, and wildlife uses.”

Lakes and reservoirs are classified based on their ability to sustain fishery resources. The beneficial water uses and parameter limitations designated for Class I streams are also applied to all classified lakes and reservoirs. The five categories for lakes and reservoirs are (NDDEQ, 2019d):

- Class 1 – Cold water fishery. Waters capable of supporting growth of cold water fish species (e.g., salmonids) and associated aquatic biota.
- Class 2 – Cool water fishery. Waters capable of supporting natural reproduction and growth of cool water fishes (e.g., northern pike and walleye) and associated aquatic biota. These waters are also capable of supporting the growth and marginal survival of cold water species and associated biota.
- Class 3 – Warm water fishery. Waters capable of supporting natural reproduction and growth of warm water fishes (e.g., largemouth bass and bluegill) and associated aquatic biota. Some cool water species may also be present.
- Class 4 – Marginal fishery. Waters capable of supporting a fishery on a short-term or seasonal basis (generally a “put and take” fishery).
- Class 5 – Not capable of supporting a fishery due to high salinity.”

The antidegradation policy of the Standards of Water Quality for the State of North Dakota, Rule 33-16-02 furthermore mandates the NDDEQ to classify waterbodies based on the level of water quality protection consistent with their beneficial uses. All waterbodies are classified into one of three levels under this antidegradation protection. Below are the three categories outlined in Chapter 33-16-02.1 of Standards of Quality for Waters of the State (NDDEQ, 2019d):

- Category 1 – Very high level of protection that automatically applies to Class 1 and Class IA streams and Class I, II, and III lakes, and wetlands that are functioning at their optimal level. In addition, Category 1 is presumed to apply to Class II and Class III streams. Particular Class II and Class III streams may be excluded from Category 1 if, at the time of the antidegradation review, it is determined that one or both of the following criteria are

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applicable: 1) there is no remaining assimilative capacity for any of the parameters that may potentially be affected by the proposed regulated activity in the segment in question, or 2) an evaluation submitted by a project applicant demonstrates (based on adequate and representative chemical, physical, and biological data) that aquatic life and primary contact recreation uses are not currently being attained because of stressors that will require a long-term effort to remedy.

- Category 2 – Class IV and Class V lakes and particular wetlands after antidegradation review. In addition, Class II and Class III streams or wetlands meeting one of the criteria identified above at the time of the antidegradation review shall be included in Category 2.
- Category 3 – Highest level of protection; Outstanding State Resource Waters.”

The state water quality classifications for waterbodies crossed by the Project are listed in table 2.2.1-2. The proposed Project has 18 individual crossings of Class III streams, 1 Class I stream (Missouri River/Lake Sakakawea), and 3 Class 4 open water ponds (NDDEQ, 2019d). The Project does not cross any Category 3 waterbodies designated as Outstanding State Resource Waters. By following the FERC Procedures, the Project is not expected to result in permanent changes to water quality or the water quality classifications of the waterbodies crossed.

Section 305(b) of the Clean Water Act (CWA) requires states to submit biennial water quality reports to the EPA. These reports, referred to as 305(b) reports or Integrated Water Quality Monitoring and Assessment Reports, describe surface water and groundwater quality and trends and the extent to which waters are attaining their designated uses (such as aquatic life use). Section 303(d) of the CWA requires states to identify waters that are not attaining their designated use(s) and to develop total maximum daily loads, which represent the maximum amount of a given pollutant that a waterbody can assimilate and still meet its designated use(s). The Project crosses one waterbody, Lake Sakakawea, which is 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. Lake Sakakawea is listed as not supporting its designated use of fish consumption due to the presence of methylmercury within the lake. Lake Sakakawea is considered a low priority for total maximum daily loads (NDDEQ, 2018).

According to the EPA’s List of Sediment Sites with Substantial Contamination, there are no sites identified in North Dakota (EPA, 2018). To determine if any of the waterbodies crossed by the Project are known to contain contaminated sediments, the most recent (2018) Section 303(d) impaired waterbody list and 305(b) Water Quality Inventory Report for North Dakota were reviewed. None of the waterbodies crossed by the Project are identified for contaminated sediments in the 2018 report (NDDEQ, 2018).

As discussed in 2.2.1, water quality is one of the congressionally authorized purposes of the COE Garrison Project. Water quality in Lake Sakakawea must comply with the State of North Dakota’s standards for a Class 1 lake. The COE has a water quality monitoring program in place. The Garrison Project has identified silt control; soil erosion prevention; pollution abatement; adequate and safe municipal water supplies; improving quality of water for irrigation; provision of water suitable for domestic, sanitary, and industrial purpose; and improving clarity of water for recreation and for fish and wildlife as means of maintaining and improving water quality (COE, 2007). WBI Energy will cross Lake Sakakawea using the HDD crossing method. With implementation of this crossing method and adherence to the mitigation measures

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set for in the FERC Plan and Procedures, SPCC Plan, and HDD Plan, impacts on water quality of the lake are expected to be minimal.

2.2.4 Water Use

Water use for the Project will consist of hydrostatic testing of the pipe, dust control, HDD/guided bore drilling fluid, and operational water needs. Hydrostatic testing will occur for all pipeline facilities prior to placing the pipelines in service in order to test the integrity of the pipelines. WBI Energy currently anticipates that construction of the proposed pipelines will be completed by October 2021. WBI Energy plans to hydrostatically test the pipelines as soon as possible after backfilling of the pipeline trench is complete. After hydrostatic testing is complete, the water used during the test will be discharged to an approved well-vegetated upland area(s) in accordance with the requirements of the FERC Plan and Procedures and the General Permit to Discharge under North Dakota Pollutant Discharge and Elimination System Permit. Hydrostatic testing of selected guided bore and HDD locations may be conducted in advance of each full test segment.

WBI Energy currently anticipates testing the pipeline facilities in segments as shown in table 2.2.4-1. Within each test segment, smaller test sections may be used to reduce the amount of water required at any one time. WBI Energy plans to hydrostatically test the pipelines using water obtained from water depots or surface waters located near the proposed Project. Pre-test and hydrostatic testing will be performed with water. Depending on the source of water, dichlorination tablets may be used to treat water prior to testing.

TABLE 2.2.4-1				
North Bakken Expansion Project				
Estimated Construction Water Volume Requirements				
Pipeline Hydrostatic Test Segment	Hydrostatic Testing (gallons)	HDD and Guided Bore Drilling Fluid	Dust Suppression	Water Source ^a
Tioga-Elkhorn Creek ^b	3,042,000	2,000,000	4,800,000	Water depot and/or surface waters
Line Section 25 Loop	627,000	151,000	475,000	Water depot and/or surface waters
Line Section 30 Loop	388,000	57,000	260,000	Water depot and/or surface waters
Tioga Compressor Lateral	50,400	8,500	0	Water depot and/or surface waters
Lake Sakakawea HDD	663,000	1,000,000	0	Water depot and/or surface waters
Uprate Line Section 25	141,000	25,000	16,000	Water depot and/or surface waters
Subtotals	4,911,400	3,241,500	5,551,000	
TOTAL	13,703,900			

^a If WBI Energy determines that it is necessary to obtain water from surface water sources for hydrostatic testing, it will obtain any required permits or approvals in accordance with state regulations and FERC requirements.

^b The Tioga-Elkhorn Creek pipeline is anticipated to be tested in a minimum of three sections.

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As shown in table 2.2.4-1, approximately 13.7 million gallons of water will be obtained from local water depots or surface waters in accordance with state regulations for a combination of hydrostatic testing of the pipelines, HDD and guided bore drilling fluid, and dust control. Of these 13.7 million gallons, about 4.9 million will be required for hydrostatic testing. The test segments and smaller test sections will be filled from the identified water depots by a pump with pressure recorders, gauges, and bi-directional filling pigs. A pump will transfer the water into a temporary pipe that will connect to the proposed pipeline. A foam pig will be used to ensure a positive displacement of air. At each test segment, the pipeline will then be pressurized to at least 110 percent of the maximum allowable operating pressure, and maintained at that pressure for a minimum of 8 hours. If leaks are detected during the 8-hour test period, the line will be dewatered, the leaks will be repaired, and the test segment or section will be refilled and re-pressurized until 49 CFR Part 192 specifications are met. After successfully testing each segment or section, the pipeline will be dewatered or test water will be moved or cascaded into the next section of the pipeline. To minimize water withdrawals, WBI Energy anticipates cascading water between test segments and sections, where feasible, to reuse as much water from prior test segments as possible. The water will be dewatered in a well-vegetated upland area with appropriate erosion control devices, according to the FERC Plan and Procedures and applicable permits. WBI Energy will utilize diffusers, sediment control devices, and other energy dissipating devices to minimize the potential for scour in waterbodies to which test water is discharged and to prevent erosion from discharges that occur in upland areas. Following hydrostatic testing, the pipeline will be dried by pushing foam pigs with compressed air through the test section.

Lake Sakakawea and a small natural pond are the only waterbodies that will be crossed using the HDD method. The pipe segment utilized for this HDD crossing will be pre-tested prior to installation and again as part of the overall hydrostatic testing of the installed Tioga-Elkhorn Creek pipeline. Approximately 663,000 gallons of water will be required for testing the HDD pipe section.

WBI Energy will obtain the necessary permits for use of hydrostatic test water. WBI Energy will discharge hydrostatic test water in accordance with the FERC Procedures and will comply with permit conditions regarding use and discharge of hydrostatic test waters pursuant to the requirements of the General Permit to Discharge under North Dakota Pollutant Discharge and Elimination System Permit. WBI Energy's SPCC Plan (Resource Report 1, appendix 1F) identifies measures to be implemented in the unlikely event of a leak of fuel, lubricants, or hydraulic fluids during the hydrostatic testing process.

Estimates provided in table 2.2.4-1 for dust suppression assume that water will only be used in areas where stringing, welding, coating, ditching, and backfilling are taking place. The following additional assumptions are included in the estimated volumes.

- Elkhorn Creek-Tioga pipeline—Two construction spreads working concurrently during construction. Water will be used to spray only the working side of the right-of-way (70 feet). The spoil dirt side of the right-of-way will not be sprayed. Assumes 70 days of construction will require dust suppression.
- Line Section 25 Loop—One construction spread. Water will be used to spray only the working side of the right-of-way (50 feet). The spoil dirt side of the right-of-way will not be sprayed. Assumes 45 days of construction will require dust suppression.

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- Line Section 30 Loop—One construction spread. Water will be used to spray only the working side of the right-of-way (50 feet). The spoil dirt side of the right-of-way will not be sprayed. Assumes 25 days of construction will require dust suppression.
- Uprate Line Section 25—One construction spread. Assumes 10 days of construction will require dust suppression.

Operational water needs for the Project will be limited to the Tioga Compressor Station and Elkhorn Creek Compressor Station. The source of water at the existing Tioga Compressor Station is a commercial service provided by R&T Water Supply Commerce Authority. Average water usage during 2019 was approximately 150 gallons/month. This average is expected to increase to 450 gallons/month under normal operations given the additional staff, buildings, and equipment to maintain. The new Elkhorn Creek Compressor Station will receive water from the McKenzie County Rural Water District. The water usage under normal operations is expected to be 150 gallons/month.

2.2.7 Waterbody Construction Procedures

2.2.7.1 Horizontal Directional Drill/Guided Bore Crossing

WBI Energy proposes to cross Lake Sakakawea and a natural pond using the HDD construction method, and Beaver Creek, Unnamed Tributary to Sand Creek, Unnamed Tributary to Tobacco Garden Creek, Tobacco Garden Creek (two crossings), Timber Prong Creek (two crossings), Northfork Creek, Cherry Creek, and White Earth Creek using the guided bore method. Proposed construction methods for all waterbody crossings are identified in table 2.2.1-2 above; a detailed description of the HDD/guided bore construction methods is provided in Resource Report 1 section 1.3.2.1.

In the unanticipated event that an HDD crossing cannot be completed successfully, WBI Energy will implement the contingency measures identified in its HDD Plan, which is provided in appendix 1F of Resource Report 1.

2.2.7.2 Open-Cut Crossings

With the exception of Lake Sakakawea, a natural pond, Beaver Creek, Unnamed Tributary to Sand Creek, Unnamed Tributary to Tobacco Garden Creek, Tobacco Garden Creek (two crossings), Timber Prong Creek (two crossings), Northfork Creek, Cherry Creek, and White Earth Creek, which will be crossed using the HDD or guided bore methods. Except for two manmade ponds,⁶ WBI Energy proposes to cross the remaining waterbodies using the open-cut method (8 crossings). The open-cut method involves the use of backhoe-type excavators operating from the banks of the waterbody to open a trench. Spoil excavated from the trench will be placed on the bank above the high water mark for use as backfill. Once the trench is backfilled, the banks will be restored as near as practical to preconstruction contours and stabilized. Stabilization measures could include seeding or installation of erosion control blankets. Excavated material not required for backfill will be removed and disposed of at upland disposal sites.

⁶ WBI Energy will relocate the manmade stormwater pond to a new location at the Tioga Compressor Station and will fence off and avoid the manmade pond at Enget Yard.

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Throughout the open-cut construction process, WBI Energy will follow the FERC Procedures to avoid or minimize impacts on water quality. Construction activities will be scheduled so that the trench is not excavated across the waterbody until immediately prior to pipe laying activities. The duration of in-stream construction activities (excluding blasting, if required) will be limited to 24 hours across minor waterbodies (those 10 feet in width or less) and 48 hours across intermediate waterbodies (those between 10 and 100 feet in width). Excavated spoil will be stockpiled at least 10 feet from the edge of the waterbody, and appropriate erosion control devices will be installed as necessary.

The use of the dry crossing method is not currently proposed, but will be utilized if site-specific conditions at the time of construction prevent the use of the open-cut method. Dry crossing methods involve installation of a flume pipe(s) and/or a dam and pump(s) prior to trenching across a waterbody to divert the stream flow over or around the construction area and allow trenching across the stream crossing in drier conditions that are isolated from the stream flow. Spoil removed during the trenching will be stored away from the water's edge and protected by sediment containment structures. Pipe strings will be fabricated on one bank and either pulled across the stream bottom to the opposite bank or carried into place by side-boom tractors and lowered into the trench. Where these methods are employed, additional temporary workspace (ATWS) areas will be required for assembly of the pipe strings and spoil storage areas. Once the trench is backfilled, the banks will be restored as near as practical to preconstruction contours and stabilized. Stabilization measures could include seeding or installation of erosion control blankets. Excavated material not required for backfill will be removed and disposed of at upland disposal sites.

2.3 Wetlands

2.3.1 Existing Wetland Resources

Wetlands are communities situated in the transition zone between upland and aquatic communities where vegetation and soil characteristics are influenced by intermittent to permanent saturation or flooding.

Glaciation in North Dakota created a unique landscape characterized by isolated depressions, which catch runoff from localized watersheds. The wide-ranging area defined by this type of topography is commonly referred to as the “prairie potholes” region. These depressions are saturated or inundated during the wetter spring and early summer months, but frequently dry out during the summer and fall months as precipitation decreases. During drier months, or when low rainfall conditions are present throughout the year, many of these prairie potholes are dry enough that they can be cultivated and farmed along with the surrounding upland areas.

WBI Energy conducted field surveys during the 2019 and 2020 field seasons on properties where survey permission was approved by the landowner to identify and delineate wetlands within the proposed pipeline construction corridor and other work areas. In total, the field surveys examined approximately 93.5 miles (99.5 percent) of the proposed pipeline routes as well as the proposed aboveground facilities, access roads, and contractor yards. Approximately 0.5 miles (less than 1 percent) of the pipeline routes and some additional access roads and yards were not field surveyed due to lack of survey permission from landowners or as a result of route variations identified after the conclusion of the 2020 field season. Review of National Wetland Inventory (NWI) data in areas where no survey permission has been granted indicates that no additional wetlands are present in these areas. This information will be confirmed by field surveys prior to construction. Wetlands in these areas were delineated in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the Regional Supplement to the 1987 Manual: Great Plains Region

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(COE, 1987, 2010). Delineated wetlands were classified according to methodologies set forth in *Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). A copy of the WBI Energy North Bakken Expansion wetland and waterbody delineation report is provided in appendix 2A of this report. In addition, appendix 2A includes a map of the NWI wetlands for the Project area.

The proposed Project corridor contains 43 wetland crossings (of 42 wetlands, one of which is crossed twice) by the Project workspace. Table 2.3.1-1 provides a summary of wetland impacts by wetland type along the proposed pipeline routes. Appendix 2B provides a complete list of wetlands identified along the proposed pipeline routes with their milepost locations, classification, crossing length, and area affected by construction and operation of the proposed facilities. Data provided in table 2.3.1-1 and appendix 2B is based on WBI Energy’s 2019 and 2020 field surveys completed through August 13, 2020.

TABLE 2.3.1-1			
North Bakken Expansion Project Wetland Types Crossed by the Pipeline Routes ^a			
NWI Classification ^b	Approximate Crossing Length (feet) ^c	Acreage Affected During Construction ^d	Acreage Affected During Operation ^e
PEM	2,958.3	5.1	0.0
PSS	0.0	0.0	0.0
PFO	0.0	0.0	0.0
Project TOTAL	2,958.3	5.1	0.0
^a Wetland crossings are based on WBI Energy’s field survey data as of October 7, 2019. ^b Types listed are those occurring within the 100-foot-wide construction corridor based on Cowardin classifications. PEM - Palustrine emergent, may be temporarily, seasonally, or semi-permanently flooded PSS - Palustrine scrub shrub PFO - Palustrine forested ^c The length of centerline crossing was calculated from field-delineated or NWI polygons, rounded to the nearest foot, summed for each type. Values are rounded to nearest tenth of an acre. ^d Based on the construction corridor and additional workspace areas associated with the construction corridor. ^e Because all wetlands affected by operation of the Project are emergent, WBI Energy will not need to mow a 10-foot-wide strip over the pipeline facilities. Therefore, no permanent operational impacts on wetlands will occur from the Project.			

2.3.2 U.S. Fish and Wildlife Service Wetland Easements

A number of private parcels in the vicinity of the proposed pipeline route are subject to wetland easements obtained by the U.S. Fish and Wildlife Service (FWS) under regulations described at 16 United States Code 668dd(c). The easements define permanent agreements between the FWS and all present and future landowners to protect wetland basins within the easements in perpetuity. WBI Energy coordinated with the FWS and incorporated several route variations into the proposed route to avoid or minimize crossings of wetland easements.

The FWS advised WBI Energy that its interests in wetland easements are limited to individual wetland basins as opposed to the entire area within the easements. Ground disturbing activities that affect protected wetland basins within easements are prohibited without prior approval of the FWS. Such activities are subject to review by FWS staff to determine if the activities are appropriate and compatible with the objectives of the easement program. The proposed activities within the easement require a special use

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permit/right-of-way grant if they are found to be compatible. Ground-disturbing activities that do not affect protected wetland basins (e.g., boring underneath a wetland basin) within the easements are not subject to review by the FWS.

The FWS provided WBI Energy with maps depicting locations of protected wetland basins within the wetland easements crossed by the proposed pipeline. WBI Energy is working to make route adjustments to avoid all of the wetland basins within the FWS easements or to cross those basins by guided bore crossing. As shown in table 2.3.2-1, the proposed pipeline will cross wetland easements in seven locations and two protected basins within those easements. One of these basins is currently proposed to be crossed by guided bore and WBI Energy is working with the FWS to avoid the other basin. If any route changes were to occur that affect wetland basins within FWS easements, or if the existing basins crossed cannot be avoided, WBI Energy will submit a request for compatibility determinations for these crossings to the FWS.

TABLE 2.3.2-1 U.S. Fish and Wildlife Service Wetland Easements Crossed by the Pipeline Routes		
Pipeline Facility/Approximate Starting and Ending Mileposts	Length of Easement Crossing (miles) ^a	Number of Protected Basins Within the Crossing
Line Section 25 Loop		
0.6 to 1.5	1.0	2
5.2 to 5.7	0.6	0
18.8 to 20.3	1.5	0
Line Section 30 Loop		
0.5 to 1.0	0.5	0
Uprate Line Section 25		
NA (Bore 1)	<0.1	0
NA (Bore 2)	<0.1	0
NA (Bore 4)	<0.1	0
Total	3.6	0
^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.		

2.3.4 Wetland Impacts and Mitigation

As shown in table 2.3.1-1 above and appendix 2B, the proposed pipeline routes will temporarily affect approximately 5.1 acres of palustrine emergent wetlands. This includes 42 wetlands located within the construction right-of-way, associated ATWS, yards, and temporary access roads. No wetlands will be permanently drained or filled as a result of Project construction.

Pipeline construction will result in both short- and medium-term alterations of the vegetative cover in wetlands along the proposed right-of-way. In the short-term, construction activities have the potential to diminish the recreational and aesthetic value of wetlands through clearing, trenching, spoil placement, vehicle traffic, and related construction disturbances. Wetland functions such as erosion control, buffering,

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and flood flow attenuation, sediment retention, and nutrient retention will also be affected by construction. These effects typically will be greatest during and immediately following construction through the short term. Impacts on palustrine emergent wetlands will likely be of short duration, as these types of wetlands can regenerate relatively rapidly. Revegetation will typically occur the growing season following construction, and the disturbed wetland will likely become re-established to preconstruction conditions in two or three growing seasons after construction.

Other types of impacts associated with construction of the pipeline facilities could include temporary changes to wetland hydrology and water quality. During construction, failure to segregate topsoil over the trench in wetlands could result in the mixing of the topsoil with the subsoil. This could result in reduced fertility and limit the success of revegetation efforts after construction. In addition, inadvertent compaction and furrowing of soils during construction could result from the temporary stockpiling of soil and the movement of heavy machinery. This could alter the natural hydrologic patterns of the wetlands, inhibit seed germination, or increase seedling mortality. Altered surface drainage patterns and hydrology could increase the potential for siltation, and turbidity could result from construction and trenching activities.

WBI Energy will minimize impacts on wetlands by using the construction techniques described in Resource Report 1, section 1.3, by implementing measures identified in the FERC Procedures and by complying with the conditions of applicable permits. The primary means to minimize impacts on wetlands during construction are limiting the width of the construction right-of-way in wetlands; limiting the amount of equipment and use of extra workspace in and adjacent to wetlands; using equipment stabilization measures such as timber mats, which help minimize compaction; limiting grading in wetlands; and segregating topsoil over the trenchline (but not in saturated conditions in accordance with the FERC Procedures).

WBI Energy proposes to utilize a 75-foot-wide construction right-of-way through the majority of wetlands consistent with the FERC Procedures, and will request site-specific modifications in areas where the right-of-way width and ATWS will deviate from the FERC Procedures. Within wetlands, herbaceous vegetation will generally be left intact except for the trenchline. WBI Energy will also take precautionary measures outside wetlands to prevent construction in uplands from having impacts on wetlands. These measures are outlined in the FERC Plan and include:

- installing sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at unfarmed wetland crossings, where necessary, to prevent sediment flow into wetlands; and
- installing sediment barriers along the edge of the construction workspace where unfarmed wetlands are adjacent to the construction right-of-way and the ground surface slopes toward the unfarmed wetlands; this will minimize the risk of sediment flowing into unfarmed wetlands.

In addition to the protective measures described above, WBI Energy will locate ATWS areas a minimum of 50 feet from the edge of wetlands, except where site-specific conditions preclude doing so. The site-specific exceptions are documented in table 1.3-1 of Resource Report 1. This approach generally minimizes the need for construction equipment to make multiple passes through the wetland, thus reducing direct impacts on the wetland. In both wetland and upland workspace, original topographic conditions and contours will be restored to the maximum extent practicable after completion of construction.

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WBI Energy plans to complete pipe bending and welding prior to excavating the trench. Once the trench is excavated, the pipe will be installed and the trench will be backfilled as quickly as possible. For wetlands that could be inadvertently drained as a result of water following along the trenchline of the pipe, trench plugs will be left in-place until immediately prior to the pipe being installed. Drag sections and tie-ins, where a minimum section of trench is open each day and a prefabricated section of pipe is installed and backfilled in the same day, may be utilized outside of the wetland for wetlands where trench plugs are not practical. To prevent affecting hydrology of wetlands that may be subject to drainage as a result of water following the pipeline along the trench and having a French drain effect, permanent trench breakers will be installed at the boundaries of wetlands to maintain wetland hydrology.

In unfarmed wetlands that are not saturated at the time of construction, WBI Energy will segregate topsoil from the trenchline in order to protect its integrity and help preserve the seed bank. Segregating the topsoil should preserve the potential for natural revegetation of the right-of-way to its preconstruction plant community. Trench spoil excavated in wetlands, in most cases, will be stored in the construction corridor adjacent to where it was excavated. In areas where excavated trench spoil may flow into undisturbed areas of the wetland, silt fence, straw bales, or other appropriate sedimentation control devices will be installed at the edges of the construction right-of-way to prevent sediment migration.

Following pipeline installation, the trench will be backfilled with material excavated within the wetland and preconstruction contours will be restored to the maximum extent practicable. Additionally, WBI Energy will replace segregated topsoil to the surface layer of the trench during backfilling. Replacing the wetland topsoil and restoring preconstruction hydrology will promote re-establishment of wetland vegetation. Following construction, WBI Energy will conduct 3 years of follow-up monitoring and reporting to monitor restoration of unfarmed wetland plant communities, in accordance with the FERC Procedures.

In saturated wetlands where soils are unable to support equipment and safely excavate the trench, temporary work surfaces of timber mats or travel pads will be installed adjacent to the pipeline trench. Construction will proceed as in unsaturated wetlands, except topsoil will not be segregated due to the saturated conditions where these conditions are present. Pipe stringing and fabrication may occur within the wetland adjacent to the trench, or in a designated extra workspace adjacent to the wetland.

In accordance with the FERC Procedures, WBI Energy will construct the pipeline facilities across farmed wetlands using the same methods as adjacent farmed uplands. Most seasonally saturated farmed wetlands are used for crop production and topsoil will be segregated in the same manner as topsoil in upland agricultural lands. Pipe stringing and fabrication will generally occur within the farmed wetland adjacent to the trench, or adjacent to the farmed wetland in a designated ATWS.

Inadvertent spills of fluids used during construction, such as fuels, lubricants, and solvents, may contaminate wetland soils and vegetation could inadvertently be spilled during construction in wetlands. To minimize the potential for spills in wetlands, and any impacts from such spills, WBI Energy will implement the measures identified in its SPCC Plan (see appendix 1F of Resource Report 1) as described above in section 2.2.7.

During construction, erosion controls will be placed where necessary according to the FERC Plan and Procedures along the pipeline rights-of-way and surrounding extra work areas to minimize impacts on adjacent unfarmed wetlands. Erosion and sedimentation barriers will be installed and maintained throughout the construction period to prevent disturbed soils and sediment from migrating into adjacent

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undisturbed wetland areas. During trench-dewatering activities, trench water will be removed and filtered to remove sediments, and dewatering will occur outside of wetland within well vegetated upland areas.

2.4 Cumulative Impacts

2.4.3 Wetlands

Pipeline construction will result in temporary impacts on wetlands, primarily involving soil disturbance and potential for soil compaction, vegetation removal, and potential spills during construction activities. The Project will result in approximately 5.1 acres of temporary wetland impacts

The following RFFAs fall within the two HUC-12 subwatersheds crossed by the Project and the Project's temporal scope for wetland resources.

- Several electric transmission line projects (, Montana-Dakota Utilities and Aurora Wind) could result in permanent impacts on wetlands associated with monopole structures, monopole structure foundations, and guy wires. Each of these structures are assumed to affect less than 0.1 acre at each location. For the Aurora Wind Project, all permanent impacts on wetland basins under FWS easements will be avoided.
- Several pipeline transmission projects could result in short-term construction impacts similar to the impacts described for the Project. The proposed Bakken natural gas pipeline will temporarily affect 0.9 acre of wetlands. The Cenex pipeline could cross 120.2 acres of FWS wetland easements. Large impacts will be avoided using the HDD crossing method based on the requirements of the COE Nationwide Permit 12. Wetlands impacts associated with the water transmission line in Watford City, and the Western Area Water Supply Project are not publically available; however, these pipelines are likely to be collocated with existing roads.
- Two road construction projects fall within the geographic scope for wetland impacts. The Red Mike Area to County Road 42 project would permanently affect 1.1 acres of wetlands and temporarily affect 0.2 acre of wetlands, which would be mitigated through compensatory mitigation, removal of temporary fill material, and restoration of preconstruction contours. The proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass would permanently affect 19.0 to 26.8 acres of wetlands.
- It is assumed that local developments, notably the Pine Ridge Development in Tioga and the new elementary school in Watford City, would be sited to avoid wetlands for constructability purposes.

It is assumed that RFFAs would comply with federal wetlands regulations, which require mitigation measures for impacts on COE-jurisdictional wetlands. Stormwater pollution prevention regulations require the use of BMPs to prevent runoff from the construction corridor from entering waters of the United States. Additionally, the footprint of each RFFA that falls within the geographic scope for impacts on wetlands is relatively small compared to the size of the subwatershed. As a result, Project impacts when combined with the RFFAs are not expected to have a significant cumulative impact on wetlands.

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3.0 UPDATES TO RESOURCE REPORT 3 – FISH, WILDLIFE, AND VEGETATION

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

3.1 Fisheries and Other Aquatic Resources

As described in section 2.2.1 of Resource Report 2, the Project will require 22 waterbody crossings, including 11 perennial streams, 6 intermittent streams, 2 ephemeral streams, and 3 open water ponds. Of the 22 waterbody crossings, 2 waterbodies (s-wm-ea-001p and s-wm-ea-002) are crossed by both the Tioga-Elkhorn Creek pipeline and the Line Section 30 Loop at the same location. The reduction in waterbody crossings since the filing of the February 14, 2020 FERC Application is due to continued field efforts in areas that were previously unsurveyed. In many instances waterbodies that were previously identified using NHD data were confirmed to be non-water points or wetlands. None of these waterbodies contains or has the potential to contain species managed by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, nor do they support essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265 as amended through October 11, 1996). Therefore, the Project will not affect any essential fish habitat.

The Project lies within the Missouri River watershed and crosses two sub-basins: the Lower Little Missouri River and Lake Sakakawea sub-basins. WBI Energy proposes to cross one waterbody (Lake Sakakawea [s-wm-eb-003p]) and one natural pond via the horizontal directional drill (HDD) crossing method and ten waterbodies (Beaver Creek [s-wm-eb-002], Unnamed tributary to Sand Creek [s-mk-ea-001], Unnamed tributary to Tobacco Garden Creek [s-mk-wa-001], Tobacco Garden Creek [s-mk-eb-002 and s-mk-ea-003]⁷, Timber Prong Creek [DSK_NHD_11 and DSK_NHD_5]⁸, Northfork Creek [s-mk-eb-005], Cherry Creek [DSK_NHD_4], and White Earth Creek [s-bk-eb-001p]) via the guided bore method. Except for two manmade ponds,⁹ WBI Energy currently plans to cross the remaining waterbodies via the open-cut crossing method; however, the exact crossing method will be determined based on site-specific flow conditions at the time of construction. Waterbodies with no perceptible flow at the time of construction will be crossed using the open-cut method. If the waterbody has perceivable flow at the time of construction, the waterbody will be crossed using either the guided bore crossing method or a dry crossing method (flume or dam-and-pump) based on site-specific conditions. Table 2.2.1-2 of Resource Report 2 lists the names, locations, and proposed crossing methods for each waterbody crossed by the by the Project by pipeline facilities. The waterbody crossing methods are discussed in more detail in section 1.3.2.1 of Resource Report 1. WBI Energy proposes to source water for use during construction of the Project from local water depots or surface waters as described in section 2.2.4 of Resource Report 2.¹⁰

⁷ Tobacco Garden Creek will be crossed via the guided bore method at two locations along the Tioga-Elkhorn Creek pipeline (mileposts [MP] 30.3 and 36.5).

⁸ Survey permission has not been granted in this area at the end of the 2020 survey season; information provided is based on NHD data.

⁹ WBI Energy will relocate the manmade stormwater pond to a new location at the Tioga Compressor Station and will fence off and avoid the manmade pond at Enget Yard.

¹⁰ If WBI Energy later determines it is necessary to obtain water from surface water sources for Project-related purposes, it will obtain any required permits or approvals in accordance with state regulations and Federal Energy Regulatory Commission requirements.

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3.1.1 Existing Fisheries Resources

Fisheries are typically classified according to water temperature (warmwater or coldwater), type of use (commercial or recreational/sport fishing), salinity (marine, freshwater, or estuarine), and use by open water marine fishes that require freshwater upstream areas to spawn (anadromous) or freshwater species that migrate to marine waters for reproduction (catadromous). The North Dakota Game and Fish Department (NDGFD) website indicates that all fishery types in the state are warmwater with the exception of portions of the Missouri River system. None of the waterbodies in the Project area is classified as marine or estuarine waters, and none has the potential to contain anadromous or catadromous species.

The NDGFD confirmed that there are no significant spawning aggregations for commercial and recreational fisheries, and no commercial fishery operations in any waterbodies crossed by the Project (NDGFD, 2019). However, the NDGFD will require its standardized April 15 to June 1 spawning restriction timeframe for in-water construction activities. During this timeframe, any in-water work will require a waiver issued based on the specific location, timing, or permitted activity. Additionally, the NDGFD will require a 72-hour notice for any required equipment inspections in accordance with its Aquatic Nuisance Species regulations.

Section 2.2.2 of Resource Report 2 describes the water quality classification systems for streams (Class I, IA, II, and III) and lakes/reservoirs (Class 1 through 5) in North Dakota. Both of these systems indicate if a waterbody can support aquatic life. As shown in table 2.2.1-2 of Resource Report 2, the proposed Project has 18 individual crossings of Class III streams, 1 Class I stream (Missouri River/Lake Sakakawea), and 3 Class 4 open water ponds (North Dakota Department of Environmental Quality, 2019). The Project does not cross any Category 3 waterbodies designated as Outstanding State Resource Waters.

Generally, the quality of a fishery, including the composition of its species, is influenced by the water quality of the waterbody. Where water quality has been degraded because of the surrounding activities, the fishery typically contains more tolerant fish species, such as common carp, creek chub, and various forage species. Conversely, a more diverse fishery (e.g., a sport fishery) will be supported in larger streams or lakes with good water quality and suitable habitat. Small populations of sport fish may also occur in medium to small streams dependent upon water flow, but populations large enough to support a sport fishery are generally restricted to large, perennial rivers and/or lakes/reservoirs with more diverse habitats. Intermittent waterbodies may provide nursery habitat for forage fish and some recreational species; however, the lack of permanent water allows these waterbodies to support only very limited fishery and aquatic resources. Table 3.1.1-1 provides a list of representative fish species (including fisheries classifications) that may be found in the perennial waterbodies crossed by the Project.

No federally listed mussel species have been identified in the Project area. Invasive species such as the zebra mussel are only known to occur within the Red River Valley Basin in the eastern portion of North Dakota; therefore, the species' known range is outside of the Project area.

3.1.3 Construction and Operation Impacts and Mitigation

WBI Energy's proposed spring-to-fall construction schedule will occur during the wet season in North Dakota; however, WBI Energy anticipates that most of the intermittent and ephemeral streams crossed by the Project are not likely to be flowing at the time of construction.

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For perennial waterbodies or those with flow at the time of construction, short-term impacts associated with construction activities have the potential to cause increased sedimentation and turbidity, temperature changes due to removal of vegetation cover over streams, introduction of water pollutants, or entrainment of fish. With the implementation of the construction and mitigation measures described below, however, impacts on fisheries and other aquatic life are expected to be minor, localized, and limited to the construction period. WBI Energy does not anticipate any long-term or population-level impacts on fisheries or aquatic life. No long-term effects on water temperature, dissolved oxygen, pH, benthic invertebrates, or fish communities are expected to occur due to construction or operation of the pipelines or aboveground facilities.

To minimize impacts on aquatic resources within the Project area, construction activities for the Project will be conducted in accordance with the Federal Energy Regulatory Commission's (FERC) *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). In addition, WBI Energy will implement the measures specified in its *Spill Prevention, Control, and Countermeasure Plan* (SPCC Plan) and *Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan*. Copies of WBI Energy's construction, restoration, and mitigation plans are provided in appendix 1F of Resource Report 1. Each of these documents is designed to minimize construction impacts on environmental resources, including aquatic resources. Specific construction procedures that will be used to protect surface water resources are discussed in sections 2.2.7 and 2.2.8 of Resource Report 2. With the implementation of the FERC Procedures and WBI Energy's other construction and mitigation plans, the Project is not expected to result in any permanent changes to the water quality or water quality classifications of the waterbodies crossed.

As discussed in section 2.2.1 of Resource Report 2, fish and wildlife is one of the congressionally authorized purposes of the U.S. Army Corps of Engineers (COE) Garrison Project. Use of the HDD crossing method at Lake Sakakawea and a natural pond and the guided bore crossing method at Beaver Creek, Unnamed tributary to Sand Creek, Unnamed tributary to Tobacco Garden Creek, Tobacco Garden Creek, Timber Prong Creek, Northfork Creek, Cherry Creek, and White Earth Creek will minimize impacts on fisheries and other aquatic life at these waterbodies. These methods also will minimize impacts on grassland habitat. A travel lane/bridge will be required at some of these waterbodies, which will require some vegetation clearing. Impacts on riparian vegetation are expected to be minimal due to the bridge connecting bank to bank. WBI Energy will implement the measures described in its *Horizontal Directional Drill/Guided Bore Fluid Monitoring and Operations Plan* to minimize any potential impacts on waterbodies resulting from an inadvertent release of drilling fluid during the HDD process. Additional information regarding the HDD and guided bore crossing methods is provided in section 1.3.2.1 of Resource Report 1.

Other waterbodies with perceptible flow at the time of construction will be crossed using either the guided bore crossing method or a dry open-cut crossing method (flume or dam-and-pump) based on site-specific conditions. In-stream construction and removal of riparian vegetation may cause a temporary increase in turbidity levels at these crossings, which can increase the sedimentation rate immediately downstream of the construction work area. To minimize such impacts, temporary erosion and sedimentation controls will be installed and maintained throughout construction in accordance with the FERC Plan or Procedures, as appropriate. Following completion of each crossing, streambeds and banks will be restored to their preconstruction conditions to the extent practicable and revegetated in accordance with the FERC Procedures, which will help minimize erosion and reduce long-term impacts on fisheries.

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The majority of small waterbodies crossed by the Project are not expected to contain fish at the time of construction. At waterbodies with no perceptible flow at the time of crossing, WBI Energy will use the open-cut method to install the crossing. In streams with fish, most effects of the open-cut crossing method will be localized and of short duration and will not have a significant impact on resident fish populations. In-stream construction activities typically take place in less than 24 hours for minor streams and less than 48 hours for intermediate streams. The rapid pace of construction along with implementation of the other measures identified in the FERC Plan or Procedures will reduce the impacts of sedimentation and turbidity on aquatic life. Additionally, it is expected that individual fish, where present, will temporarily relocate upstream or downstream of the crossing locations to avoid the most turbid water.

Implementation of the measures specified in WBI Energy's SPCC Plan will minimize potential impacts on aquatic resources due to inadvertent releases of fuel or mechanical fluids. As specified in the SPCC Plan, hazardous materials, chemicals, fuels, and lubricating oils will not be stored, nor will concrete coating activities be performed, within 100 feet of stream banks. In most cases, refueling or hydraulic fluid servicing of construction equipment also will not be conducted within 100 feet of stream banks. If the equipment cannot be reasonably moved beyond 100 feet of the stream banks, refueling or hydraulic servicing may be conducted under the supervision of WBI Energy's environmental inspectors (EI) in accordance with the SPCC Plan.

Entrainment of fish and other aquatic organisms during withdrawals is sometimes a concern during pipeline construction projects. If surface waters are required for hydrostatic test water sources, intake screens will be implemented sized to eliminate the entrainment of fingerling and small fish during water withdrawal. Additionally, the majority of smaller waterbodies crossed by the Project are not expected to contain fish at the time of the crossing; therefore, the Project is not anticipated to significantly affect fishery resources within the Project area.

3.2 Wildlife Resources

3.2.1 Existing Wildlife Resources

3.2.1.1 Agricultural Land

Agricultural land comprises about 904.3 acres (62 percent) impacted by the construction of the Project (based on acres affected as described in section 8.2 and table 8.2-1 of Resource Report 8). Despite the conversion of native vegetation to cropland in these areas, many game and non-game wildlife species inhabit the grassy and wooded edges of farmland and adjacent riparian and wetland habitat. Agricultural areas bordered by shrubland or hedgerows tend to have greater species diversity due to the proximity of a variety of foraging, nesting, roosting, and cover habitats.

In general, monocultures in cultivated cropland provide poor quality wildlife habitat in the Project area. While these areas tend to support relatively low wildlife diversity, croplands may provide a food source for opportunistic species such as deer, ring-necked pheasant, and migrating waterfowl. In addition, land modified by agriculture but left fallow can serve as surrogate habitat for bird species typically found in grasslands (Natural Resources Conservation Service [NRCS], 1999).

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3.2.1.2 Open Land

Open land comprises about 452.1 acres (31 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). Open areas, which include non-forested areas such as grassland, shrubland, and emergent wetlands, provide wildlife with a variety of protective cover and forage food sources such as seed, foliage, roots, and insects. Game animals that inhabit open land include mule deer, pronghorn, gray partridge, and white-tailed jackrabbit. Non-game grassland mammals include coyote, badger, and several types of voles and mice. In addition, several reptiles and amphibians inhabit grasslands such as the bullsnake, plains garter snake, prairie rattlesnake, short-horned lizard, Great Plains toad, and plains spadefoot toad. Many of these species are prey animals for raptors that may be found in grasslands such as red-tailed hawk, northern harrier, and prairie falcon. Mixed-grass prairie is also important breeding habitat for sharp-tailed grouse.

Several neotropical migratory songbirds prefer to nest in open herbaceous vegetation including the western meadowlark, chestnut-collared longspur, grasshopper sparrow, and lark bunting. The low-lying vegetation in grasslands provides necessary habitat structure for protection from predators and brood-rearing activities. Grasslands provide a variety of forage food sources to migrating songbirds such as insects and other invertebrates, fruits, and native grass seeds.

Wetlands (emergent wetlands and shrub/scrub) are included in the open land cover type. A variety of amphibian species, such as the tiger salamander and northern leopard frog use these habitats as breeding locations because of a lack of fish and other aquatic predators. Wetlands also provide year-round habitat for mammals such as muskrats and American mink. The wetlands are often located next to upland habitats increasing the diversity of wildlife within a small area. Impacts on wetlands are dependent on the duration and the type of localized disturbance. WBI Energy will follow the FERC Procedures for wetland crossings, and will restore wetlands accordingly, resulting in only temporary impacts.

3.2.1.3 Forested Land

Forested land, which includes primarily small stands of deciduous trees in riparian areas or along wetland edges and hedgerows along roads or fields, comprises about 1.1 acres (less than 1 percent) of the Project area affected by construction (see section 3.5.1 for additional information). Forested lands provide food, cover, and young-rearing habitat for a wide variety of wildlife species. Secondary canopy shrubs and saplings, brush piles, and fallen logs provide cover for a number of small- to medium-sized mammals. Standing dead trees may provide nesting or roosting sites for a variety of birds and mammal species as well as foraging opportunities for birds. The most conspicuous mammals that utilize the forested habitats in the Project region include deer, red fox, eastern fox squirrel, raccoon, and bats.

3.2.1.4 Developed Land

Developed land, which includes roads, railroads, and utility corridors, comprises about 96.2 acres (7 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). These areas generally provide poor habitat for wildlife. Typical wildlife species that may be found in developed land include squirrels, mice, skunks, raccoons, and mourning doves. Many species

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found in developed areas are considered opportunistic species that inhabit a number of the other habitat types found along the Project. These species have adapted to developed areas.

3.2.1.5 Open Water

Open water comprises 15.9 acres (1 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). In addition to fish, a number of mammal species, waterfowl, and a variety of reptiles and amphibians utilize open water habitat. Some mammal and bird species are dependent on aquatic habitats for food and cover, while other species, such as the raccoon, are less restricted, but prefer to be close to water.

3.2.2 Significant Wildlife Habitats

There are no National Park Service Wilderness Areas, National Wild and Scenic Rivers, or state-designated high quality or outstanding natural resource waters crossed by the Project (Wild and Scenic Rivers Council, 2014). The Project crosses about 2.1 miles of USFS property through the LMNG. The LMNG is the largest grassland in the country and was once considered part of the Custer National Forest, but is now part of the Dakota Prairie Grasslands (USFS, 2019b). Table 3.2.2-1¹¹ provides the USFS Region 1 sensitive and watch list wildlife species of interest for the LMNG that may occur within the Project area.¹²

Several FWS conservation easements or management areas are within the Project area, including wetland and grassland easements (FWS, 2019b). These areas include wetland easements within the Crosby and Lostwood Wetland Management Districts and grassland conservation easements held by the FWS. Specifically, 12 Waterfowl Production Areas (WPA) will be crossed by the proposed pipeline routes (see table 3.2.2-2). WPAs provide habitat for a variety of waterfowl, shorebirds, grassland birds, plants, insects, and wildlife. These WPAs are acquired as public lands, or protected through easements within the FWS National Wildlife Refuge System (FWS, 2012). WPAs are primarily located within the prairie wetlands or potholes of the Dakotas, Minnesota, and Montana. North Dakota has more than one-third of the national WPAs (FWS, 2007a). WBI Energy is continuing to consult with the FWS regarding these easements and working to adjust the route and workspaces as needed to minimize or avoid impacts where feasible.

¹¹ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

¹² The USFS wildlife biologist at the LMNG identified two additional avian species, the peregrine falcon (*Falco peregrinus*) and sharp-tailed grouse (*Tympanuchus phasianellus*), that warrant further consideration (USFS, 2019f). These species will be addressed in a separate Biological Evaluation prepared for the USFS (provided in appendix 3b).

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TABLE 3.2.2-2			
North Bakken Expansion Project			
U.S. Fish and Wildlife Service Waterfowl Production Areas that May Be Crossed by the Project			
Production Area Name ^{a/} Route Identifier	Milepost Range	Size (acres)	Impact (acres)
Burke County WPAs			
Line Section 25 Loop	19.1–19.8	833.4	10.6
Line Section 25 Loop	20.1–20.3	481.7	6.2
Line Section 25 Loop (Norse Plant Receipt Station)	20.3 ^b	850.0	< 0.1
Line Section 25 Loop (Norse Transfer Station)	20.3 ^b	850.0	< 0.1
Uprate Line Section 25 (Highway 40 Bore)	NA ^b	2,335.7	2.6
Uprate Line Section 25 (86th Street NW Bore)	NA ^b	481.7	< 0.1
Uprate Line Section 25 (86th Street NW Bore)	NA ^b	849.9	3.4
Uprate Line Section 25 (89th Avenue NW/93rd Street NW Bore)	NA ^b	561.2	1.0
Williams County WPAs			
Line Section 25 Loop	0.6–1.0	642.6	6.5
Line Section 25 Loop	1.0–1.5	321.0	5.9
Line Section 25 Loop	5.3–5.7	239.7	5.6
Line Section 30 Loop	0.5–1.0	195.7	4.5
^a	All of the WPAs are associated with the FWS Crosby Wetland Management District.		
^b	Milepost range was not designated because the area is a proposed guided bore site associated with the uprate to Line Section 25 or an access road near the Line Section 25 Loop.		

3.2.3 Construction and Operation Impacts and Mitigation

3.2.3.1 Pipeline Facilities

Construction of the Project will require the use of a temporary construction right-of-way, and operation of the pipelines will require retention of a permanent easement. Except across USFS land,¹³ WBI Energy proposes to use a 100-foot-wide temporary construction right-of-way through upland areas for the 24-inch-diameter Tioga-Elkhorn Creek and Elkhorn Creek-Northern Border pipelines. The temporary construction right-of-way will be 75 feet wide through wetland areas and during construction of all other pipeline facilities. The permanent easement will be 50 feet wide. Areas of additional temporary workspace (ATWS) will be required at wetland and waterbody crossings; road and railroad crossings; points of inflection along the route; areas where special construction methods will be implemented (e.g., the HDD or guided bore crossing methods); and areas where additional space is needed for storage of stripped topsoil. Resource Reports 1 and 8 provide more information regarding areas that will be affected by the construction and operation of the pipelines.

Until vegetation is reestablished, construction activities will temporarily reduce feeding, nesting, and cover options for wildlife and migratory birds in the immediate Project area. Mobile species may be temporarily disturbed or displaced from portions of their habitats, and mortality of individuals of less mobile species, such as some small mammals, reptiles, or amphibians, may occur. Indirect wildlife and migratory bird impacts associated with construction noise and increased human activity will be temporary and could

¹³ The construction right-of-way width across USFS land will be reduced to 50 feet with an additional 25 feet of temporary workspace.

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include displacement and avoidance of work areas. Both direct and indirect impacts on wildlife along the proposed pipeline routes and in other work areas will generally be of short duration and limited to the period of construction activities.

Effects on most non-forested upland habitat disturbed by construction will be temporary, and these areas are expected to recover quickly once construction is completed. Similarly, project-related impacts on scrub/shrub and emergent wetland habitats will be relatively short term. Crossings on native prairie habitat will be temporary, and these areas will be re-seeded and allowed to revert to preconstruction conditions. The temporary effects on these habitats should have little or no significant impact on their importance to wildlife, and no changes to wildlife populations are anticipated.

WBI Energy avoided wooded areas to the extent possible when developing the proposed routes. However, while forested lands comprise less than 0.1 percent of the Project area impacted by construction (based on acres affected as described in Resource Report 8), these areas will be impacted to a greater extent than other vegetation types. This is due to the long-term conversion of wooded habitats to earlier successional stages in the temporary right-of-way, and the permanent conversion to scrub/shrub and/or non-woody herbaceous species in the permanent, maintained easement. Due to the very small percentage of forested land crossed, it is anticipated that the Project will not have significant impacts on wildlife associated with loss of forest habitat.

To avoid impacts on wildlife during construction, WBI Energy will minimize the length of the excavated pipeline trench left open overnight and leave breaks in the windrowed materials to facilitate wildlife movement across the construction right-of-way. In areas where the trench is left open overnight, WBI Energy will install earthen plugs or escape ramps at regular intervals, as directed by the EIs, to allow wildlife to escape the trench. Additionally, trenches, excavations, uncapped pipe segments, and idle equipment will be checked for wildlife before initiating construction activities each day. Any wildlife that has entered the work area will be allowed to exit the work area of its own volition.

Following construction, temporary workspace, including ATWS, as well as most areas within the permanent pipeline easements will be restored to preconstruction conditions and vegetative cover in accordance with the FERC Plan and Procedures and landowner agreements. In order to maintain accessibility of the right-of-way and to accommodate pipeline integrity surveys, however, vegetation along the pipeline rights-of-way may be cleared periodically in accordance with the FERC Plan and Procedures (except in areas crossed by HDD or guided bore where vegetation maintenance will not be conducted). Active cropland will be allowed to revert to preconstruction use across the full width of the right-of-way. In non-cultivated uplands, the entire 50-foot-wide permanent easement will be maintained in an herbaceous state. In wetlands, the FERC Procedures allow for a 10-foot-wide corridor centered over the pipelines to be permanently maintained in an herbaceous state, and trees greater than 15 feet in height within 15 feet of the pipelines may be cut and removed from the right-of-way. No maintenance will likely need to occur in wetlands that are seasonally or permanently flooded. Given the predominance of agricultural and open land along the proposed pipeline routes, WBI Energy anticipates that the need for routine vegetation maintenance will be infrequent and limited to specific locations such as areas around pipeline markers and road crossings.

WBI Energy has implemented several additional measures to avoid and minimize impacts. To the extent practicable, the proposed routes were selected and refined to avoid environmentally sensitive areas that may provide habitat and to parallel existing infrastructure. For example, the route minimizes areas crossed with tree stands to the extent practicable. WBI Energy also proposes to use the HDD or guided bore crossing method at select feature crossings. Because the Project will not permanently alter the characteristics of the

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majority of the available wildlife and/or migratory bird habitats, Project-related impacts on wildlife and migratory birds are anticipated to be temporary and limited to the period of construction activities. The temporary effects on these habitats should have little or no significant impact on their importance to wildlife and migratory birds, and no changes to populations are anticipated.

WBI Energy has incorporated reroutes to avoid and/or minimize potential impacts on many of the higher quality habitats crossed by the Project (as described below and in Resource Report 10). In addition, WBI Energy made route adjustments to avoid any protected wetland basins located within the FWS easements crossed by the Project.

The NDGFD expressed concern about impacts on native prairie habitats and wooded draws due to the longer recovery time for these habitats and, in the case of wooded areas, permanent conversion to herbaceous lands within the permanent right-of-way. In addition to avoiding these habitats to the extent practicable, WBI Energy will follow measures provided in its *Noxious Weed Management Plan* (see appendix 1F of Resource Report 1) and will restore the right-of-way as near as practical to preconstruction condition in accordance with the FERC Plan and Procedures. For more information on vegetation impacts, see section 3.5 below.

3.2.3.2 Aboveground Facilities

Minimal impacts on wildlife species and their habitats will result from construction and operation of the proposed aboveground facilities. Modifications to the Tioga Compressor Station will affect 8.1 acres of previously disturbed land, including 7.5 acres of open land, 0.5 acre of developed land, and 0.1 acre of open water (consisting of a manmade stormwater feature). Following construction of the modifications, 4.4 acres of open land and less than 0.1 acre of open water will be retained for operation of the facility. Construction of the proposed Elkhorn Creek Compressor Station will affect a combined 13.1 acres of land, including 10.4 acres of agricultural land, 2.2 acres of open land, and 0.5 acre of developed land. Following construction, 10.9 acres will be retained for operation within the fenced facility, resulting in the conversion of 8.6 acres of agricultural land and 2.2 acres of open land to developed land.

The Project will also require modifications to existing and construction of new delivery, receipt, and transfer stations. Additionally, three block valves and one pig launcher/receiver will extend outside the permanent right-of-way. Together these facilities will affect 33.4 acres of land, including 15.8 acres of agricultural land, 15.5 acres of open land, 2.1 acres of developed land, and 0.1 acre of open water. Following construction, 12.3 acres of agricultural land, 10.9 acres of open land, 0.9 acre of developed land, and less than 0.1 acre of open water will either be converted to or retained as developed land as part of the fenced facilities.

Construction and operation of these facilities will result in minimal impacts on wildlife because the existing wildlife in these areas can migrate to other, nearby locations with suitable habitat. Additionally, 47 percent of the land affected by construction of the aboveground facilities will be agricultural (cultivated) land, which tends to support low diversity species. Consequently, construction and operation of these facilities are not expected to have a significant effect on wildlife. Measures that will be implemented to minimize impacts during construction of aboveground facilities will be similar to those used during pipeline construction and will include erosion and sedimentation controls and other measures specified by the FERC Plan and Procedures, and SPCC Plan.

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3.4 Bald Eagle and Golden Eagle Protection Act

The BGEPA (16 USC 688), provides additional protection to bald and golden eagles. The BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, purchase, transport, export, or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. “Take” under this act is defined as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb.” Disturb is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles occur, then project proponents may need to take additional conservation measures to achieve compliance with the BGEPA. The BGEPA includes limited exceptions to its prohibitions through a permitting process, including exceptions to take bald or golden eagle nests that interfere with resource development or recovery operations.

WBI Energy reviewed golden eagle nest habitat range data available from the NDGFD (NDGF, 2017), which shows a small area (less than 0.1 acre) of nest habitat for golden eagles that would be crossed by the Project. This area is located within the temporary right-of-way at MP 19.3 of the Tioga-Elkhorn Creek pipeline. Incidental on-the-ground raptor nest surveys were conducted during wetland and waterbody surveys (limited to the 300-foot-wide wetland/waterbody survey corridor), during which no nesting activity for bald or golden eagles was observed. This survey corridor did not capture potential noise impacts associated with the HDD crossing of Lake Sakakawea and a natural pond. According to the NDGRD golden eagle nest habitat data, there is no known habitat within 0.5 mile of the HDD entry sites. Prior to the start of HDD construction at Lake Sakakawea and the natural pond, WBI Energy will complete surveys for eagle nests within 0.5 mile of the proposed entry sites. If an eagle nest is identified near the Project area, WBI Energy will implement the measures described in the FWS’ 2007 National Bald Eagle Management Guidelines (FWS, 2007b) to avoid and minimize impacts on nesting eagles. The proposed Project is not expected to affect bald or golden eagles.

3.5 Vegetation Resources

3.5.1 Existing Vegetation Resources

The Project area lies primarily within the Missouri Coteau and Missouri Slope geographic regions of North Dakota. The Missouri Coteau extends from the Missouri River to the western edge of the Drift Prairie Region. Characteristics of this region include numerous wetlands, particularly on the eastern edge, decreasing toward the Missouri River. Land use in this region is dominated with agricultural farming and livestock ranching. The Missouri Slope Region is characterized with irregular topography comprised of layers such as sandstone and shale. Livestock grazing is predominant in this region (NDGFD, 2016b). Vegetation cover types in the Project area are reflective of historical and current agricultural and pastoral land use practices in the area.

Forested land is limited in North Dakota and is primarily found in riparian zones, which are areas between waterbodies and adjacent upland (NDGFD, 2016b). In 2017, the land area of North Dakota included an estimated 1.8 percent, or 814,900 acres, of forested land dominated by hardwood types such as green ash (*Fraxinus pennsylvanica*), bur oak (*Quercus macrocarpa*), and hickory (*Carya* spp.) (USFS, 2018). In many areas, forests have experienced significant alterations over the past decades due to the spread of Dutch elm disease, overgrazing, altered water flows, and conversion of the land to other uses (LeBoldus et al., 2013; Kotchman, 2010). Invasion of the emerald ash borer (*Agrilus planipennis*) is also a top concern and

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potential threat for North Dakota ash species (USFS, 2018). In the Project area, the forested land predominantly consists of small stands of deciduous trees, primarily in wooded riparian areas and along the edges of wetlands, and hedgerows along roads and fields. Trees common in these areas include green ash and eastern cottonwood (*Populus deltoids*).

Most of the land in the Project area is agricultural land (primarily cropland) or open land (non-native and native grassland and emergent and scrub-shrub wetlands). Less than 0.1 percent of the affected area is classified as forested land. Developed land, which consists of existing roads, railroads, and utility lines, encompasses about 6.5 percent of the Project area affected by construction (see table 8.2-1 of Resource Report 8). Only limited vegetation communities, such as grasses or other maintained cover, are found in developed lands; therefore, developed lands are not further discussed in this section.

Table 3.5.1-1 summarizes the vegetation and cover types that will be affected by construction and operation of the proposed Project facilities. Land uses crossed by the Project were classified based on information obtained through biological field surveys and review of digital aerial photography including land use and land cover types. Surveys identified segments of native grassland (i.e., native prairie) within all vegetation classes. The acres of native grassland were subtracted from each of the vegetation class acreage totals accordingly. Therefore, the acres shown in table 3.5.1-1 may not match the acres listed in table 8.2-1 of Resource Report 8 for agricultural, open, and forested land.

3.5.1.3 Native Grasslands

Native prairie is generally divided into three categories including tallgrass, mixed-grass, and shortgrass communities. Each of these categories is comprised of a blend of grasses and forbs (NDGFD, 2016b). Tallgrass prairie is predominantly found in eastern North Dakota in the Red River Valley and is outside of the Project area. The Project area will primarily overlap mixed-grass and shortgrass communities.

Mixed-grass prairie in North Dakota is found within the Missouri Coteau region and includes surrounding wetlands. This region is characterized with hummocky, rolling hills and a high concentration of wetlands including alkaline lakes. Tracts of native prairie remain and cattle grazing is extensive on the landscape (NDGFD, 2016b). Mixed grass prairie includes a combination of tallgrass and shortgrass species and is dominated by warm and cool season grasses and sedges. Common grasses include prairie junegrass, western wheatgrass (*Pascopyrum smithii*), green needlegrass, needle and thread (*Hesperostipa comate*), blue grama, little bluestem, and needleleaf sedge (*Carex duriuscula*). Mixed-grass prairie includes a variety of forbs such as pasque flower (*Pulsatilla patens*), prairie smoke (*Geum triflorum*), Missouri milkvetch (*Astragalus missouriensis*), and purple prairie clover (*Dalea purpurea*) (USFS, 2019c; NDGFD, 2016b). Shortgrass prairie is primarily found in the higher elevations within the Missouri Slope region. Dominant species in shortgrass prairie include warm season grasses such as spikemoss (*Selaginella densa*), blue grama, needleleaf sedge, and buffalograss (*Bouteloua dactyloides*). A variety of forb species are often found in North Dakota shortgrass prairie and species may include purple locoweed (*Oxytropis lambertii*), white wild onion (*Allium* spp.), prickly pear (*Opuntia humifusa*), and white beardtongue (*Penstemon digitalis*) (USFS, 2019c; NDGFD, 2016b).

WBI Energy documented locations of native prairie in the Project area as part of its environmental field survey. Native prairie was distinguished from other grasslands based on the species diversity and the absence of indicators of previous agricultural activities (e.g., tillage patterns in soil, rock piles along margins of fields). Table 3.5.1-2 identifies by milepost the locations where surveys identified native prairie. The proposed pipelines will cross native prairie at 44 locations with a total crossing length of about 6.0 miles.

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Table 3.5.1-1

North Bakken Expansion Project										
Vegetation Types Affected by Construction and Operation of the Project (acres)^a										
Facility	Agricultural Land ^b		Open Land (Non-Native Grassland) ^c		Open Land (Native Grassland) ^d		Forested Land ^e		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline Facilities										
Tioga-Elkhorn Creek	475.0	238.9	157.9	84.8	61.1	33.4	1.1	0.6	695.1	357.7
Elkhorn Creek-Northern Border	2.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.7	1.4
Line Section 25 Loop	120.3	80.0	54.1	36.8	4.7	3.0	0.0	0.0	179.1	119.8
Line Section 30 Loop	71.9	48.0	12.4	8.3	0.0	0.0	0.0	0.0	84.3	56.3
Tioga Compressor Lateral	1.5	1.0	1.6	1.2	0.0	0.0	0.0	0.0	3.1	2.2
Uprate Line Section 25	0.6	0.5	2.4	2.0	0.0	0.0	0.0	0.0	3.0	2.5
Subtotal	672.0	369.7	228.5	133.0	65.8	36.4	1.1	0.6	967.4	539.7
Additional Temporary Workspace										
Tioga-Elkhorn Creek	51.8	0.0	16.2	0.0	6.2	0.0	0.0	0.0	74.2	0.0
Line Section 25 Loop	17.1	0.0	8.6	0.0	0.3	0.0	0.0	0.0	26.0	0.0
Line Section 30 Loop	8.3	0.0	1.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0
Tioga Compressor Lateral	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Uprate Line Section 25	3.8	0.0	7.4	0.0	0.0	0.0	0.0	0.0	11.2	0.0
Subtotal	81.1	0.0	33.5	0.0	6.5	0.0	0.0	0.0	121.1	0.0
Staging Areas										
Boehm Staging Yard	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	5.9	0.0
Weffen Staging Yard	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0
68th Street Yard	14.2	0.0	5.6	0.0	0.0	0.0	0.0	0.0	19.8	0.0
CRS Yard	9.7	0.0	13.0	0.0	0.0	0.0	0.0	0.0	22.7	0.0
Delta Contractors Yard	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0
Enget Yard	0.0	0.0	39.3	0.0	0.0	0.0	0.0	0.0	39.3	0.0
Flatlands Yard 1	4.2	0.0	0.4	0.0	0.0	0.0	0.0	0.0	4.6	0.0
Flatlands Yard 2	0.3	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.4	0.0
Lobell Yard	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0
Schmidt Yard	7.9	0.0	0.1	0.0	0.0	0.0	0.0	0.0	8.0	0.0
Franz Yard	0.0	0.0	19.9	0.0	0.0	0.0	0.0	0.0	19.9	0.0
Aux Sable Yard	39.5	0.0	2.0	0.0	0.0	0.0	0.0	0.0	41.5	0.0

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Table 3.5.1-1

North Bakken Expansion Project											
Vegetation Types Affected by Construction and Operation of the Project (acres)^a											
Facility		Agricultural Land ^b		Open Land (Non-Native Grassland) ^c		Open Land (Native Grassland) ^d		Forested Land ^e		Total	
		Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
	Subtotal	111.8	0.0	87.5	0.0	0.0	0.0	0.0	0.0	199.3	0.0
Access Roads											
	Access Roads	23.6	0.9	14.6	1.2	0.2	0.0	0.0	0.0	38.3	2.1
	Subtotal	23.6	0.9	14.6	1.2	0.2	0.0	0.0	0.0	38.3	2.1
Aboveground Facilities											
	Elkhorn Creek Compressor Station (new)	10.4	8.6	2.2	2.2	0.0	0.0	0.0	0.0	12.6	10.8
	Tioga Compressor Station (existing)	0.0	0.0	7.5	4.4	0.0	0.0	0.0	0.0	7.5	4.4
	Springbrook Plant Receipt Station (existing)	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4
	Northern Border Interconnect (new)	1.2	0.8	3.0	2.5	0.0	0.0	0.0	0.0	4.2	3.3
	Norse Plant Receipt Station (existing)	< 0.1	< 0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.3
	Norse Transfer Station (new)	< 0.1	< 0.1	1.2	0.3	0.0	0.0	0.0	0.0	1.2	0.3
	Tioga Plant Receipt Station (existing)	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1
	Robinson Lake Plant Receipt Station (existing)	1.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.6
	Block valves and pig launcher/receivers (new)	0.7	0.7	1.1	1.1	0.0	0.0	0.0	0.0	1.8	1.8
	Subtotal	15.8	12.3	15.5	10.9	0.0	0.0	0.0	0.0	31.2	23.2
Project Total		904.3	382.9	379.5	145.2	72.4	36.4	1.1	0.6	1,357.4	565.1
^a	The subtotals and totals in this table may not reflect the sum of the addends due to rounding.										
^b	Includes cultivated crops, hayfields, and pastureland.										
^c	Includes herbaceous land, scrub/shrub, and non-forested wetlands.										
^d	Includes surveyed segments of native grassland.										
^e	Includes deciduous and mixed forestland (hedgerows, upland wooded areas, and deciduous forests).										

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TABLE 3.5.1-2					
North Bakken Expansion Project Pipeline Facility Crossings of Native Prairie ^a					
Pipeline Facility	Start Milepost	End Milepost ^b	Length (miles) ^b	Area Affected by Construction (acres)	Area Affected by Operations (acres)
Tioga-Elkhorn Creek	9.9 ^b	9.9	0.0	0.4	0.1
	10.2	10.6	0.4	5.1	2.5
	10.6	NA ^c	NA ^c	<0.1	<0.1
	12.3	12.3	<0.1	0.4	0.2
	12.3	NA ^c	NA ^c	<0.1	<0.1
	13.2	13.3	0.1	0.8	0.4
	15.1	15.1	0.1	0.7	0.4
	16.7	16.8	0.1	1.3	0.7
	17.0	17.1	0.1	2.1	1.0
	18.0	18.2	0.2	0.5	0.4
	18.8	19.0	0.1	1.1	0.7
	19.1	19.2	0.1	0.1	<0.1
	21.5	21.5	<0.1	2.5	0.5
	22.9	23.0	0.1	0.7	0.7
	23.1	23.2	0.1	0.7	0.4
	25.6	25.6	0.1	0.4	0.4
	25.7	25.8	0.1	0.6	0.6
	26.1	NA ^c	NA ^c	<0.1	<0.1
	28.2	28.6	0.2	1.8	0.9
	28.7	29.0	0.3	2.9	1.6
	29.1	29.1	<0.1	0.2	0.2
	29.1	29.9	0.5	6.5	2.8
	29.4	NA ^c	NA ^c	0.1	< 0.1
	31.4	31.4	0.0	0.4	0.2
	31.8	32.4	0.6	7.2	3.6
	32.4	NA ^c	NA ^c	<0.1	<0.1
	38.6	38.7	0.1	0.7	0.7
	50.2	50.6	0.4	4.8	2.4
	50.6	NA ^c	NA ^c	<0.1	<0.1
	50.6	50.8	0.2	1.1	1.0
51.1	NA ^c	NA ^c	1.5	0.1	
51.9	NA ^c	NA ^c	0.1	0.1	
54.7	54.8	0.1	0.8	0.3	

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TABLE 3.5.1-2					
North Bakken Expansion Project Pipeline Facility Crossings of Native Prairie ^a					
Pipeline Facility	Start Milepost	End Milepost ^b	Length (miles) ^b	Area Affected by Construction (acres)	Area Affected by Operations (acres)
	55.5	55.5	0.1	0.9	0.4
	55.8	56.1	0.3	3.6	1.9
	56.1	56.2	0.1	1.5	0.8
	56.3	56.4	0.1	1.6	0.6
	57.2	57.3	0.2	2.8	1.0
	58.3	58.3	<0.1	0.3	0.3
	58.4	58.4	<0.1	0.2	0.2
	58.6	59.4	0.7	9.4	4.4
	59.9	60.1	0.2	1.9	1.0
Line Section 25 Loop					
	4.6	5.2	0.5	5.0	3.0
	10.0	NA ^c	NA ^c	<0.1	<0.1
TOTAL			6.0	72.4	36.4
^a Totals may not match the sum of addends due to rounding. ^b Mileposts are reference points and may not equal total length due to rounding. ^c Native grassland habitat is not crossed by the proposed pipeline centerline; therefore, the ending milepost and length are not applicable (NA). The starting milepost indicates the approximate location of the native prairie within the workspace.					

3.5.2 Unique, Sensitive, and Protected Vegetation Communities

As noted in section 3.2.2, the proposed Project will cross about 2.1 miles of the LMNG. Table 3.5.2-1 lists the LMNG sensitive plant species and habitat that may occur within the Project area.

In conjunction with Dakota skipper (DASK) habitat mapping, WBI Energy conducted sensitive plant surveys along approximately 2.1 miles where the Project crosses the USFS-managed lands within the LMNG. Prior to surveys, biologists reviewed the most recent *Biological Survey and Report Guidelines – Little Missouri National Grassland* (USFS, 2019a) and associated Geographic Information System data with known DASK locations. Biologists visited known and easily accessible reference plots prior to the survey to ensure habitat and plant characteristics. The survey area included a 300-foot-wide corridor along the pipeline routes and a short, 40-foot-wide corridor centered on a proposed access road that branches off Highway 1806 in McKenzie County. On June 17, July 17, and August 12, 2020, qualified biologists surveyed the Project area on the USFS-managed land using meandering transects with an emphasis on areas having habitat features suitable to the USFS sensitive plant species listed in table 3.5.2-1¹⁴. In addition to surveying for sensitive plant species, biologists also surveyed for any occurrence of USFS watch list plant

¹⁴ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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species (see table 3.5.2-2¹⁵). Botanical survey data for the Project is included in the Biological Assessment and Biological Evaluation (appendices 3A and 3B).

3.5.2.1 Conservation Reserve Program – No Edits

3.5.2.2 Agricultural Conservation Easement Program – No Edits

3.5.3 Construction and Operation Impacts and Mitigation

Table 3.5.1-1 summarizes the amount of vegetation by cover type that will be affected by construction and operation of the proposed facilities. Construction of the Project will affect 1,357.4 acres of vegetated land, including 967.4 acres for the construction right-of-way, 121.1 acres for the ATWS, 199.3 acres for the yards and staging areas, 31.2 acres for the aboveground facilities, and 38.3 acres for the temporary and permanent access roads. Approximately 565.1 acres will be retained for operation of the Project, including 539.7 acres for the permanent right-of-way, 23.2 acres for the aboveground facilities, and 2.1 acres for the permanent access roads.

Construction of the proposed pipelines will require clearing and grading of the temporary right-of-way, which will be conducted as described in Resource Report 1. The permanent right-of-way will be maintained as cropland or other pre-existing vegetation communities while the remaining temporary workspace along the construction right-of-way and any ATWS areas will be allowed to revert to preconstruction conditions. Implementation of the measures specified in the FERC Plan and Procedures will minimize Project-related impacts on affected vegetation communities.

The amount of time it will take for vegetation in disturbed areas to recover will vary by vegetation type; for example, tree communities take longer to reestablish than shrubs or herbaceous vegetation. Agricultural land and most open lands (e.g., non-native grassland) are expected to revert to preconstruction condition relatively quickly, generally within 1 or 2 years following construction. However, native grasslands may take considerably longer to restore (approximately 3 to 5 years based on previous experience in the Project area). WBI Energy has routed the proposed pipelines to avoid native grasslands to the extent practicable and will implement measures identified in the FERC Plan and Procedures to minimize and mitigate impacts on these areas where they cannot be avoided. Measures include consulting with the NRCS and USFS to determine appropriate seed mixes, including potential pollinator-friendly species, for revegetating these areas.

Following construction, WBI Energy will revegetate disturbed non-agricultural upland areas within the right-of-way and ATWS in accordance with the FERC Plan using seed mixes recommended by the NRCS, landowners, or other appropriate agencies. Revegetation will provide protection against erosion. In areas where final grade and cleanup is completed during active construction, WBI Energy will comply with the timelines for seeding identified in the FERC Plan (weather and soil conditions permitting) or as recommended by the NRCS or FSA (subject to approval by landowners). Timely restoration of the construction right-of-way, reseeding with the appropriate seed mixes, and the use of effective erosion control measures will minimize the duration of vegetation disturbance.

¹⁵ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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Following construction, small trees and shrubs (if present prior to construction) will be allowed to grow within the temporary construction right-of-way and ATWS areas. In the permanent right-of-way, however, a 10-foot-wide area over the pipelines may be maintained in an herbaceous state to facilitate pipeline inspection. Vegetation maintenance activities on the rest of the permanent right-of-way will be conducted no more than every 3 years. WBI Energy anticipates that the need for vegetation maintenance along the proposed pipeline routes will be infrequent due to the predominantly open and agricultural vegetation types.

Construction and operation impacts on wetland vegetation will be minimized by the implementation of the measures specified in the FERC Procedures. In addition, the use of the guided bore construction method will minimize and/or avoid impacts on several wetlands crossed by the Project. Additional information regarding impacts on wetlands is provided in section 2.3 of Resource Report 2.

Construction and operation of the proposed aboveground facilities will generally be similar to those described above for the pipeline rights-of-way and in the wildlife habitat discussion in section 3.2. At these locations, temporary workspace will be restored to preconstruction condition and cover types; areas within the permanent facility footprints at each site will be converted to developed lands. As noted in table 3.5.1-1, the Project will have 23.2 acres of permanent impacts on vegetation as a result of the proposed aboveground facilities.

3.5.4 Noxious Weeds and Other Invasive Plants

According to regulations in North Dakota law (North Dakota Century Code [NDCC] 4.1-47-01), noxious weeds are defined as any “plant propagated by either seed or vegetative parts and determined to be injurious to public health, crops, livestock, land or other property” as determined by NDCC sections 4.1-47-05, 4.1-47-10, or 4.1-47-21. The North Dakota Department of Agriculture (NDDA) has established and implemented a statewide network to manage noxious weeds. Under these regulations (NDCC 4.1-47-02), “each person shall do all things necessary and proper to control the spread of noxious weeds and no person may distribute, sell, or offer for sale” noxious weeds.

Noxious and invasive plant species include non-native, undesirable native, or introduced species that are able to exclude and/or out-compete desired native vegetation, thereby decreasing overall species diversity. The NDDA has a list of noxious weeds that are recognized and regulated by all cities and counties in North Dakota. Counties have the option to add additional weeds onto a list for enforcement in their jurisdictions. McKenzie, Williams, Burke, and Mountrail Counties list 19 noxious weed species potentially occurring in the area (see table 3.5.4-1¹⁶).

WBI Energy conducted noxious weed surveys for state- and county-listed noxious weed species within a 300-foot-wide corridor centered on the proposed pipeline centerlines within grassland areas. These noxious weed surveys were conducted concurrently with wetland and waterbody surveys and were not timed to coincide with any specific morphological state. Data points and/or polygons were collected at observed noxious weed infestations, and percent cover was recorded (see the Wetland/Waterbody Delineation Report included as appendix 2A of Resource Report 2). Weed species identified include Absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), purple loosestrife (*Lythrum salicaria L.*, *Lythrum virgatum L.*, and all cultivars), and Russian knapweed

¹⁶ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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(*Centaurea repens*). Table 3.5.4-2 summarizes noxious weeds observed in the Project area overlapping or adjacent to Project workspaces. For a summary of all noxious weeds observed during surveys refer to appendix 2A.

TABLE 3.5.4-2					
North Bakken Expansion Project Summary of Noxious Weeds Observed in the Project Area During Surveys					
Species	Route Identifier	Start Milepost	End Milepost ^a	Length ^b (feet)	Acres ^c
Absinth wormwood (<i>Artemisia absinthium L.</i>)	Line Section 25 Loop	19.3	19.3	179.8	0.1
Canada thistle (<i>Cirsium arvense (L.) Scop.</i>)	Schmidt Yard	NA	NA	NA	NA
	Tioga-Elkhorn Creek	40.9	NA	NA	NA
	Tioga-Elkhorn Creek	53.6	53.7	286.5	<0.1
	Tioga-Elkhorn Creek	62.4	NA	NA	NA
Leafy spurge (<i>Euphorbia esula L.</i>)	Boehm Staging Yard	NA	NA	NA	NA
	Bore #4	0.0	NA	NA	NA
	Bore #4	0.1	NA	NA	NA
	Bore #4	0.1	NA	NA	NA
	Line Section 25 Loop	5.0	5.0	53.9	<0.1
	Line Section 25 Loop	5.1	5.1	57.4	<0.1
	Line Section 25 Loop	5.1	5.1	NA	N/A
	Tioga Compressor Lateral	0.4	NA	NA	NA
	Tioga-Elkhorn Creek	0.4	NA	NA	NA
	Tioga-Elkhorn Creek	5.9	5.9	23.8	<0.1
	Tioga-Elkhorn Creek	16.9	NA	NA	NA
	Tioga-Elkhorn Creek	19.1	19.3	954.1	2.0
	Tioga-Elkhorn Creek	51.5	NA	NA	NA
Purple loosestrife (<i>Lythrum salicaria [L., Lythrum vigatum L.]</i> , and all cultivars)	Line Section 25 Loop	4.7	NA	NA	NA
Russian knapweed (<i>Centaurea repens L.</i>)	Line Section 30 Loop	3.4	3.5	428.7	0.1

^a Points were taken for many of these noxious weed locations; however, end mileposts were not recorded. Therefore, not applicable (NA) was recorded.

^b Length (feet) of proposed pipeline centerlines crossed. NA = Not applicable as the distance was minimal.

^c Points were taken for many of these noxious weed locations, and acreages were not calculated; therefore, not applicable (NA) was recorded.

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3.6 Endangered and Threatened Species

3.6.1 Federally Listed Species

Eight species either federally listed as threatened or endangered or identified as candidate species have the potential to occur within the Project area. DCH for the federally threatened piping plover was also identified within the Project area. The FWS has designated critical habitat for the DASK in North Dakota, South Dakota and Minnesota. North Dakota Critical Habitat Units 11 and 12, which are the closest critical habitat to the Project, are located in McKenzie County approximately 5 and 12 miles southeast of the HDD crossing on the south shoreline of Lake Sakakawea. As no impacts on DASK DCH will occur from the Project, it is not discussed in this section.

The species lists were compiled from a review of the FWS Information, Planning and Conservation (IPaC) System (FWS, 2019b, 2020a) and agency consultations (see appendix 1G of Resource Report 1). Table 3.6.1-1 provides a summary of the federally listed species that potentially occur in the Project area.

3.6.1.3 Interior Least Tern

Interior least terns (*Sterna antillarum athalassos*) inhabit sparsely vegetated sandbars or shoreline salt flats of lakes along the Missouri River System for breeding purposes. Interior least terns are present in North Dakota from mid-May through August, with peak breeding season ending in mid-July (FWS, 2013a and 2019c). In McKenzie and Williams Counties, known breeding areas for the interior least tern occur on sandbars of the Missouri and Yellowstone Rivers (FWS, 2018a). In North Dakota, the interior least tern is found mainly on the Garrison reach of the Missouri River from the Garrison Dam south to Lake Oahe (southeast of the Project), and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (west of the Project). Available shoreline habitat can fluctuate depending on water levels in the reservoir, and releases from Garrison Dam are regulated during the nesting season to accommodate nesting terns (COE, 2018a).

The COE has monitored the interior least tern at Lake Sakakawea since at least 1993. Their data (years 1993 to 2019) show several observations of nesting birds within the Project area, the closest about 0.2 mile from one of the geotechnical bore locations, and nesting pairs documented near Tobacco Garden Bay located about 1 mile west of the HDD crossing on the south side of Lake Sakakawea (COE, 2018b).

The interior population of least tern is listed as an endangered species under the ESA. The U.S. population of the interior least tern was proposed for delisting on October 23, 2019, with a final determination to be made by the FWS within 1 year (FWS, 2018a). If delisted, the interior least tern would maintain protection under the Migratory Bird Treaty Act, but would no longer receive protection under the ESA. The population has declined due to loss of habitat from dam construction and river channelization on the major rivers they inhabit. Other factors inhibiting interior least tern populations include human disturbance and changes in water temperatures that may affect the quantity of forage fish available (FWS, 2013a; NDGFD, 2016d).

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TABLE 3.6.1-1		
North Bakken Expansion Project Federally Listed Species in the Project Area		
Species	Federal Status	Habitat Notes
Mammals		
Gray wolf ^a (<i>Canis lupus</i>)	Endangered	Rare to uncommon in North Dakota. Occasional sightings. No known breeding population. Occupy wide variety of habitats where large ungulates (e.g., elk and deer) are found. Is known to cross into North Dakota from neighboring states and Manitoba, Canada.
Northern long-eared bat (<i>Myotis septentrionalis</i>)	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 Canada have cause population concern throughout this species' range.
Birds		
Interior least tern ^b (<i>Sterna antillarum</i>)	Endangered	Inhabits sparsely vegetated sandbars on the Missouri and Yellowstone Rivers.
Piping plover (<i>Charadrius melodus</i>)	Threatened (DCH)	Inhabits barren sand and gravel shores or rivers, prairie alkali wetlands, natural lakes with salt-encrusted, white beaches, and rangeland with mid- or short-grass prairie during the non-winter season.
Red knot (<i>Calidris canutus rufa</i>)	Threatened	Migrant species occurring in North Dakota during the spring and fall seasons (mid-May and mid-September to October). Utilize alkaline and freshwater lakes in North Dakota during migration. Red knots have been observed in the Missouri River system as well as sewage lagoons and large permanent freshwater wetlands.
Whooping crane (<i>Grus americana</i>)	Endangered	Migrant species occurring in North Dakota during the spring and fall seasons (April to mid-May and September to early November). Utilize wetlands, lakes, riverine areas, and a variety of cropland for roosting and foraging.
Insects		
Dakota skipper (<i>Hesperia dacotae</i>)	Threatened	Dependent on high-quality tall-grass and mixed-grass prairie. Habitat includes wet prairie dominated by bluestem grasses, wood lily (<i>Lilium philadelphicum</i>), harebell (<i>Campanula rotundifolia</i>), and smooth camas (<i>Zygadenus elegans</i>); dry prairie on ridges and hillsides dominated by bluestem grasses, green needlegrass, pale purple coneflower (<i>Echinacea</i> spp.), upright coneflower (<i>Ratibida columnaris</i>), and blanketflower (<i>Gaillardia aristata</i>).
Fish		
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	Endangered	Utilizes main channel areas with island or sandbars present within the upper Missouri River. Dams have substantially fragmented the pallid sturgeon's range in the upper Missouri River basin.
Sources: NDGFD, 2015b, 2016c, 2016d		
^a The initial 2019 FWS IPaC report included the gray wolf as a federally listed species potentially affected by activities in the Project Area; however, an updated IPaC report generated in September 2020 did not include the gray wolf.		
^b Proposed for delisting.		

3.6.1.4 Piping Plover

Piping plovers (*Charadrius melodus*) of the Northern Great Plains breed along barren sand and gravel shores of prairie rivers and alkali wetlands (FWS, 2003, 2018b). North Dakota is the most important state within the Great Plains region for nesting piping plovers (FWS, 2018b). In North Dakota, the majority of

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pipings plovers nest on prairie alkali lakes, while others select the free-flowing stretch of the Missouri River (FWS, 2018b). Piping plovers also use barren river sandbars typically along the Missouri and Yellowstone Rivers (FWS, 2018b). In North Dakota, piping plovers arrive in early to mid-April and remain until the end of August.

The COE has also been monitoring the piping plover at Lake Sakakawea since at least 1993. Their data (years 1993 to 2019) show occurrences of nesting plovers near the Project area on the north shoreline of the proposed Tioga-Elkhorn Creek pipeline crossing at Lake Sakakawea and about 0.1 mile west of the south shoreline crossing (COE, 2018b).

The piping plover is a threatened species under the ESA. The recent decline in the Northern Great Plains piping plover population is attributed to the destruction of vegetated sandbars and river islands for flood control and navigation, water level regulation policies that endanger nesting habitat, direct disturbance by people, and poor breeding success, primarily because of an increase in predator abundance (FWS, 2018b).

Nineteen areas of critical habitat for the Northern Great Plains population of the piping plover have been designated by the FWS (67 FR 57638), totaling about 183,422 acres in Minnesota, Montana, Nebraska, North Dakota, and South Dakota. Within the Project area the entirety of Lake Sakakawea is designated piping plover critical habitat. The habitat features present at Lake Sakakawea that are essential to the conservation of the species include islands composed of sand, gravel, or shale, and the islands interface with water, sparsely vegetated shorelines, and peninsulas.

3.6.2 Construction and Operation Impacts and Mitigation

3.6.2.3 Interior Least Tern

Nesting and foraging habitat for interior least terns is present on Lake Sakakawea. However, WBI Energy proposes to cross Lake Sakakawea via the HDD method, which will minimize impacts on shoreline and open water foraging habitat. Project activity occurring within 0.5 mile of an active nest has the potential to adversely affect nesting terns. Pipeline construction is currently planned to begin in May of 2021. Prior to the start of HDD construction activities at Lake Sakakawea, surveys will be conducted by a trained biologist to ensure that no interior least terns are present within 0.5 mile of the proposed construction activities to minimize potential impacts on the interior least terns. These surveys will occur within suitable habitat within 0.5 mile of the proposed HDD entry sites, and are contingent on reservoir water surface elevations and shoreline exposure. Therefore, WBI Energy has determined that the Project may affect, but is not likely to adversely affect the interior least tern.

3.6.2.4 Piping Plover

Piping plovers arrive in the Project area in April for mating and nesting and migrate south in August. Because construction of the Project is anticipated to occur from spring to late fall of 2021, which will overlap with the piping plover breeding and nesting season, it is possible that nesting birds will be present during construction. Activity occurring within 0.5 mile of an active nest has the potential to adversely affect nesting piping plovers. Therefore, noise, visual, and physical disturbances from Project activity may affect essential mating, nesting, and foraging behaviors of piping plovers at Lake Sakakawea. Pipeline construction is currently planned to begin in May of 2021. Prior to the start of HDD construction activities at Lake Sakakawea, surveys will be conducted by a qualified biologist to ensure that no piping plovers are

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present within 0.5 mile of the proposed construction activities to minimize potential impacts on piping plovers. These surveys will occur on suitable nesting habitat within 0.5 mile of the proposed HDD entry sites, and are contingent on reservoir water surface elevations and shoreline exposure. Therefore, WBI Energy has determined that the Project may affect, but is not likely to adversely affect the piping plover.

3.6.2.7 Dakota Skipper

The Project area is within DASK range and habitat; however, the Project has been designed to avoid and minimize impacts on the species to the greatest extent practicable. While DASK are not specifically known to occur within the Project area, they may be present within the reproductive, foraging, and dispersal habitats located adjacent to the construction workspace.

Based on the results of DASK habitat surveys, the Project has undergone some route changes to minimize and/or avoid impacts on DASK habitat. The FWS DCH for the DASK in North Dakota, South Dakota, and Minnesota (80 FR 59248). North Dakota Critical Habitat Units 11 and 12, which are the closest critical habitat to the Project area, are located in McKenzie County approximately 5 and 12 miles southeast of the HDD crossing on the south shoreline of Lake Sakakawea. Due to the distance between the Project and the DCHs, the Project is not anticipated to have an effect on DASK critical habitat. Areas identified as potential reproductive habitat that are adjacent to or within the Project will be excluded from the Project area during construction using a combination of HDD and/or guided bore crossing methods and installation of orange construction exclusion fencing and/or silt fencing to demarcate avoidance areas. Implementation of these measures will prevent construction equipment and temporarily stockpiled soil from encroaching into the habitat. Areas identified as potential foraging habitat that are adjacent to or within the Project area and have not previously been cleared and graded, will be excluded from construction activities using a combination of orange construction exclusion fencing and/or silt fencing to demarcate avoidance areas during the DASK annual flight period. DASK flight periods vary annually; however, the FWS confirmed that construction activities should be restricted in DASK foraging and reproductive habitat areas from June 10 through July 15 (FWS, 2020b).

After soil is cleared in grassland areas, revegetation efforts will focus on establishing a native grass and forb plant community that provides foraging opportunities for the DASK and reducing habitat fragmentation along the Project alignment. Because noxious weeds and invasive plants can outcompete native forbs that are food sources for DASK (FWS, 2017), WBI Energy will implement weed control measures to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area (see section 3.5.4 for more information).

The Project will involve disturbances related to the physical presence of people, development activities, and moving vehicles and equipment within the Project area, which may be visually or physically disruptive to DASK. There is no evidence suggesting that acoustics from the construction and operation of the Project will elicit a disruptive (positive or negative) behavioral response or injurious physiological impairment to adults or larvae of the species (FWS, 2017). Human presence is expected to have no effect to the egg or larval stages, but adult DASK could be consistently disturbed during the adult flight period. The disturbance could cause individuals to move from resting/nectaring locations or alter the flight paths of adults. Adult DASK are generally believed to avoid areas of active disturbance (FWS, 2017); however, they can traverse areas of disturbance or be driven by wind into disturbed areas. To reduce the likelihood of disrupting adult DASK during the flight period, clearing and grading activities will occur outside the flight period, the exact dates of which will be determined in coordination with the FWS. With

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implementation of the above mitigation measures, WBI Energy has determined the Project may affect, but is not likely to adversely affect DASK.

3.7 Cumulative Impacts

3.7.1.2 Wildlife

Construction and operation of the Project may result in short-term impacts on wildlife species and their habitat along the proposed pipeline routes and long-term impacts at aboveground facility sites. Until vegetation has become re-established, construction activities will temporarily reduce feeding, nesting, and cover options for wildlife and migratory birds in the immediate Project area. Additionally, wildlife and migratory birds could be temporarily displaced due to construction noise and increased human activity.

The following RFFAs fall within the Project's geographic and temporal scope for wildlife.

- Construction of the Aurora Wind electric transmission lines will temporarily affect potential habitat for ground-dwelling mammals and could potentially result in direct mortality or injury from collisions with construction equipment. Operation of the transmission line may increase the potential for bird or bat strikes with transmission line structures, conductors, or associated infrastructure. Aurora Wind will develop a Bird and Bat Conservation Strategy that will propose specific mitigation measures to minimize potential impacts on birds and bats. Anticipated impacts from a third project, the Montana-Dakota Utilities Transmission Line, are not currently available but could be similar to those described for the two electric transmission lines depending on the wildlife habitat present in the project area.
- The Aurora Wind Project will affect potential habitat for ground-dwelling mammals and avian species and will increase the potential for bird and bat strikes with turbine rotors. The project has been sited primarily within tilled and agricultural land to avoid impacts on habitat. Existing access roads will be used to the extent practical. Turbines and access roads have been sited to avoid wooded draws and shelterbelts and minimal tree removal is expected. Tree impacts will be mitigated on a 2:1 basis, as approved by the landowner and consistent with the North Dakota Public Service Commission's specifications. All collector lines will be buried to avoid potential for bird strikes. Temporarily disturbed areas will be revegetated, as appropriate, with vegetation consistent with the surrounding vegetation types. A bird and bat conservation plan will be prepared prior to operation. Coordination with the FWS is ongoing regarding potential mitigation measures for the project.
- The Cenex pipeline would result in short-term, adverse impacts on mammals during construction as well as long-term impacts on avian species due to wetland loss.
- Little information is publically available regarding the potential impacts of the Western Area Water Supply Project (WAWSP) and the 12-inch-diameter water transmission lines proposed to furnish water to "The Crossings at Watford City." It is possible that these projects could have similar impacts on wildlife as the proposed pipeline projects described above.

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- Operation of roadways such as the proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass can result in habitat loss, degradation, and fragmentation; barriers to wildlife movement; and mortality from wildlife-vehicle collisions. To offset project impacts on wildlife mobility and habitat connectivity, three wildlife crossings (i.e., structures along roadways that provide wildlife habitat connections) have been incorporated into the project design. Proposed construction and operation activities would have the potential to contribute sound and visual stimuli at levels that could result in the temporary avoidance of habitat and behavioral effects (North Dakota Department of Transportation, 2019).
- Construction and operation of the Gunslinger Federal and Gladstone oil and gas well pads would not impact species or their habitat in such a way that would affect the long-term viability or continued existence of the species. No migratory birds or resident wildlife species in the area would be impacted in such a way that would cause their populations to be listed or adversely affected. The project has been designed to minimize the acreage of disturbance to native habitat by having multi-well pads versus single-well pads and reduce habitat fragmentation by siting project features along existing roads and within previously disturbed areas. Approximately 40 acres of undisturbed habitat (e.g., grasslands, shrublands, wetlands, woodlands) would be affected during construction. Construction and operation of well pads and access roads would result in localized temporary disturbances as well as permanent conversion of potentially suitable habitat. Short-term, indirect impacts on wildlife, including noise and visual disturbances are anticipated. Some species of wildlife would relocate to adjacent habitat, while others would be temporarily displaced during construction and drilling operations.

The proposed utility line associated with the Gunslinger Federal and Gladstone project overlaps with the proposed Project at mileposts (MP) 28.6, 29.2, and a less than 0.1-mile section across a temporary access road at MP 29.4 of the Tioga-Elkhorn Creek pipeline. The Gunslinger Federal and Gladstone Project is currently under construction; therefore, it is unlikely that construction of the utility corridor would occur simultaneous to construction of the overlapping segments of the proposed project. Cumulative impacts will occur if construction of the Gunslinger Federal and Gladstone project continues during or after construction of the Tioga-Elkhorn Creek pipeline, and prior to final restoration of wildlife habitat. The time during which impacts on wildlife habitat would occur in this area would be extended; however, due to the temporary and localized nature of impacts of these two utility corridors, significant cumulative impacts are not expected.

Additionally, there is potential for cumulative habitat loss within the Tioga Dam HUC-12 watershed resulting from temporary right-of-way clearing combined with permanent impacts from transmission structures, the Aurora Wind Project, and road projects. Impacts from construction of the proposed Project right-of-way within the Tioga Dam HUC 12 watershed would be limited to 0.2 mile of the Line Section 25 Loop and 0.8 mile of the Line Section 30 Loop. For the remainder of the projects listed above, it is unlikely that habitat disturbance would occur simultaneously with the proposed Project; however, restoration activities could be ongoing at the time of Project construction. With implementation of the mitigation measures described in sections 3.2.3 and 3.3.1, significant cumulative impacts on wildlife are not expected.

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3.7.1.3 Vegetation

Construction and operation of the Project may result in short- and long-term impacts on vegetation associated with clearing and grading of the temporary right-of-way and routine clearing of permanent right-of-ways throughout operation. In the permanent right-of-way, a 10-foot-wide area over the pipelines may be maintained in an herbaceous state to facilitate pipeline inspection. Vegetation maintenance activities on the rest of the permanent right-of-way will be conducted no more than every 3 years. The remaining temporary workspace along the construction right-of-way and any ATWS areas will be allowed to revert to preconstruction conditions.

The following RFFAs fall within the Project's geographic and temporal scope for vegetation.

- Several electric transmission lines could result in temporary impacts on vegetation within the construction corridor and minor permanent impacts associated with monopoles and guy wires. These include the Montana-Dakota Utilities Transmission Line and the Aurora Wind Electric transmission line. Following construction of the Aurora Wind electric transmission line, temporarily disturbed areas will be reclaimed with vegetation consistent with the surrounding vegetation types and in accordance with NRCS recommendations, unless otherwise specified by and approved by the landowner and jurisdictional agency. Seed mixtures will be free of noxious weeds.
- Areas that have been temporarily disturbed during construction of the Aurora Wind Project will be reclaimed following construction. Revegetation will be consistent with the surrounding vegetation types and in accordance with NRCS recommendations, unless otherwise specified by the landowner and approved by the jurisdictional agency. Seed mixtures will be free of noxious weeds.
- Arrow Bear Den Gas Processing Plant II comprises 51 acres of land currently classified as herbaceous upland/rangeland and cropland. A weed management plan for the Project will be required as part of the county's Conditional Use Permit.
- Future oil and gas exploration and development of a lease parcel could result in removal of vegetation and soil compaction. The magnitude of these impacts would depend largely on the specific activity. For new exploratory and development gas wells, the U.S. Bureau of Land Management estimates that each well pad could result in approximately 1.1 acres (0.6 acre for access roads and 0.5 acre for the well pad) of short-term surface disturbance. For new producing gas wells, each well pad could result in approximately 0.6 acre (0.3 acre for access roads and 0.3 acre for the well pad) of long-term surface disturbance.
- Construction and operation of the proposed Gunslinger Federal and Gladstone oil and gas well pads would disturb approximately 50.4 acres on USFS lands within the LMNG, of which approximately 9.7 acres would be within previously disturbed areas (developed and cultivated lands) and 40.7 acres would be within undisturbed areas (grassland, shrubland, wetlands, or woodlands land use classes). Interim reclamation of the road ditches and edges of the well pads would occur after drilling and completion of the wells (i.e., within a one-year timeframe); however, well pads would affect vegetation until final reclamation (20 to 40 years). Grading and permanent modification within areas of gravel fill (e.g., well pads

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and access road running surfaces) may result in temporary modification of potential suitable habitat or undiscovered individuals for 5 of the 14 LMNG-listed sensitive plant species including blue lips, Missouri foxtail cactus, sand lily, Easter daisy, and Hooker's townsendia. Minimizing soil and vegetation disturbance during construction to the maximum extent practicable reduces impacts on potential habitat for these species. Disturbance of vegetation in areas of noxious weed infestations may result in redistribution of invasive species to the Project area through equipment and vehicle use. Applicable Grassland-wide Standards and Guidelines would be applied to all resources potentially affected by the project. Mitigation measures include minimizing areas and widths of disturbance, cleaning vehicles and equipment to remove seeds and plant propagules prior to entering USFS lands, and controlling noxious weeds according to the 2007 *Noxious Weeds Management Environmental Impact Statement* (USFS, 2007). During construction, indirect impacts would be expected from a temporary increase in fugitive dust. Fugitive dust impacts would be greatest during initial site-preparation and would vary from day to day, depending on the construction phase, level of activity, and prevailing weather conditions. Operators may reduce airborne dust during construction by using water on existing gravel roads in the Project area during dry periods; materials other than water would require approval from the USFS.

- Several pipeline transmission projects could result in impacts on vegetation. Construction of the Bakken Pipeline and the Cenex pipeline projects will require clearing and grading of the temporary right-of-way. Mitigation measures will include cleaning of vehicles and equipment, topsoil segregation and revegetation of disturbed non-agricultural upland areas. Vegetation along the pipeline rights-of-way may be cleared periodically.
- Water transmission projects include the WAWSP, a proposed water transmission line in Watford City. These projects will likely temporarily affect roadside vegetation.
- Two road construction projects fall within the geographic scope for vegetation impacts. The proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass will permanently convert vegetated areas into a transportation corridor, and construction activities would have the potential to spread or introduce noxious weeds. Upon completion of construction activities, vehicles travelling along US Highway 85 would have the potential to spread or introduce noxious weeds along the project corridor. Disturbed, non-roadway areas will be re-seeded and a noxious weed management plan will be implemented during construction. The project would have no impact on ESA-listed plant species, as no such resources occur within the project corridor. With prompt reseeded throughout the corridor and cleaning of equipment prior to entering COE lands, the North Dakota Department of Transportation road improvements from Red Mike Area to County Road 42 are unlikely to introduce new or additional noxious weeds.
- Additionally, existing vegetation is likely to be permanently removed within the footprints of several proposed residential developments in Tioga and Watford City, as well as a new elementary school in Watford City.

WBI Energy will implement the mitigation measures described in section 3.5.3 to minimize impacts on vegetation during construction and operation of the Project. Timely restoration of the construction right-

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of-way, reseeded with the appropriate seed mixes, and the use of effective erosion control measures will minimize vegetation disturbance. The utility line associated with the Gunslinger Federal and Gladstone project will overlap with the proposed project at three locations (see section 3.7.1.2). The Gunslinger Federal and Gladstone project is currently under construction, therefore it is unlikely that construction of the utility corridor would occur simultaneous to construction of the overlapping segments of the proposed project. Cumulative impacts will occur if construction of the Gunslinger Federal and Gladstone project continues during or after construction of the Tioga-Elkhorn Creek pipeline, and prior to final restoration. The time during which impacts on vegetation would occur in this area would be extended; however, due to the temporary and localized nature of impacts of these two utility corridors, significant cumulative impacts on vegetation are not expected. Due to the proposed timing for construction of the remainder of the projects listed above, it is unlikely that vegetation disturbance would occur simultaneously with the proposed Project; however, restoration may be ongoing. Permanent impacts on vegetation from routine clearing within the permanent right-of-way and aboveground facilities are expected to be localized within the permanent project footprint and significant cumulative impacts on vegetation are not expected.

3.7.1.4 Threatened and Endangered Species

As described in section 3.6.1, the Project may affect, but is not likely to adversely affect NLEB, interior least terns, piping plovers, whooping cranes, DASK, pallid sturgeon, or their habitat. Because the Project will have no effect on the gray wolf and rufa red knot, potential cumulative impacts on these species are not further evaluated. Mitigation measures that WBI Energy would implement to avoid or minimize potential impacts on federally threatened and endangered species and state species of concern are described in section 3.6.1. *[Note: WBI Energy is in the process of consulting with the FWS regarding listed species and will file the FWS response with FERC upon receipt.]*

Two electric transmission line projects (the Montana-Dakota Utilities Transmission Line and the Aurora Wind Electric transmission line), the Aurora Wind Project, several pipeline projects (the Bakken Pipeline Project, the Watford City water transmission line, and the WAWSP), and two road construction projects (the Route 9 reconstruction and the U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass) fall within the Project's geographic and temporal scope for threatened and endangered species. Anticipated impacts on threatened and endangered species associated with the Montana-Dakota Utilities Transmission Line, the Watford City water transmission line, and the WAWSP are not currently available and would be dependent on whether the projects are sited within threatened and endangered species habitat.

The Aurora Wind Electric transmission line could potentially affect wetlands or waterbodies visited by piping plovers, is located within the whooping crane migration corridor, and is sited within potentially suitable habitat areas for the DASK. Although there is potential for piping plovers to utilize wetlands and waterbodies near the project corridor, the potential for habitat loss is unlikely as impacts on wetlands would be expected to be minimal (Burns and McDonnell, 2018). Because the transmission line is within the whooping crane migration corridor, collision and mortality risk exists associated with overhead transmission lines. However, all transmission lines within 1 mile of modeled suitable whooping crane habitat will be marked with bird flight diverters per Avian Power Line Interaction Committee recommendations and FWS guidance. Construction activities will not occur within identified potentially suitable habitat areas during the DASK active flight period; any temporary impacts occurring outside of the DASK's brief flight period are unlikely to affect the species' population; and affected areas would be reseeded with the appropriate native seed mix. Therefore, it is anticipated that any cumulative impacts

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associated with the construction and operation of the proposed Project in conjunction with the Aurora Wind Electric transmission line will be minor and temporary.

The NLEB, the piping plover, and the whooping crane can occur within the proposed project area for the Aurora Wind Project. Coordination with the FWS is currently ongoing for the project. However, impacts on threatened and endangered species associated with this project could include habitat fragmentation and increased likelihood of bird strikes with the turbine rotors. Impacts on state species of concern could include habitat loss and fragmentation, direct mortality or injury due to collisions with vehicles, equipment, and turbines, and degradation of aquatic habitat due to spills or sediment loading. The project has been sited primarily within tilled and agricultural land to avoid impacts on habitat; turbines and access roads have been sited to avoid wooded draws and shelterbelts; and minimal tree removal is expected. Tree impacts would be mitigated on a 2:1 basis, as approved by the landowner and consistent with the North Dakota Public Service Commission's specifications. All collector lines would be buried to avoid potential for bird strikes. Temporarily disturbed areas would be revegetated, as appropriate, with vegetation species consistent with the surrounding area. In addition, a bird and bat conservation plan would be prepared prior to operation. The geographic scope for cumulative impacts from the Aurora Wind Project includes the area within the Tioga Dam HUC-12 watershed. However, direct impacts from construction of the proposed Project's right-of-way within the Tioga Dam HUC-12 watershed would be limited to 0.2 mile of the Line Section 25 Loop and 0.8 mile of the Line Section 30 Loop. Additionally, suitable wetlands exist directly adjacent to the proposed right-of-way in this area. For these reasons and with implementation of the proposed Project's mitigation measures described in section 3.6.2, the proposed Project is not anticipated to have significant cumulative impacts on these species when considered in conjunction with Aurora Wind Project.

The Bakken Pipeline Project has the potential to affect DASK; however, it would avoid or bore under DASK habitat or restrict construction during the DASK flight period. Therefore, significant cumulative impacts on DASK associated with the proposed Project and the Bakken Pipeline Project are not anticipated.

The Route 9 reconstruction road project has the potential to affect federally listed endangered or threatened species or their critical habitat. However, the COE would initiate consultation with the FWS, pursuant to section 7 of the ESA, as appropriate. The proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass may affect, but is not likely to adversely affect DASK due to suitable habitat occurring adjacent to the project corridor. For these reasons, significant cumulative impacts associated with the construction of these road projects and the proposed Project are not anticipated.

With implementation of the mitigation measures described above and the federally required protections for these species, significant cumulative impacts on threatened and endangered species or state species of concern are not anticipated from construction and operation of the proposed Project and the known reasonably foreseeable future actions.

3.8 New or Updated References

U.S. Fish and Wildlife Service. 2020a. Information for Planning and Consultation (IPaC). Available online at <https://ecos.fws.gov/ipac/>. Accessed September 2020.

U.S. Fish and Wildlife Service. 2020b. Personal communication between FWS (J. Reinisch) and ERM (J. Moffett) January 14, 2020.

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4.0 UPDATES TO RESOURCE REPORT 4 – CULTURAL RESOURCES

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

4.1 Area of Potential Effects

As defined by 36 CFR 800.16(d), the area of potential effects (APE) is the “geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties.” For archaeological resources, the APE is generally defined as the construction footprint for an undertaking, which in the case of the Project encompasses approximately 1,470.3 acres.

The standard construction rights-of-way for the proposed pipelines will range from 75-feet to 100-feet in width with additional temporary workspace at crossings. The archaeological survey examined a nominal 300-foot-wide corridor along the proposed pipeline routes, though in some places a wider area was inventoried due to route changes, including changes to avoid archaeological sites. The survey also covered the construction footprints for the aboveground facilities (i.e., the compressor stations and delivery and receipt stations), the footprint of the staging areas, and a 50-foot-wide corridor along access roads. In total, the archaeological survey area for the Project, including areas surveyed for recent route changes, encompasses 4,274.2 acres.

For historic structures and other aboveground resources, the APE is generally defined as the construction footprint of an undertaking plus areas within the viewshed. For the Project, the historic structures survey area encompassed the planned construction footprint as well as a buffer surrounding the proposed facilities and areas where vegetation will be cleared, encompassing the extent of potential viewshed effects up to a maximum distance of 0.5 mile. In total, the study area for historic structures and other aboveground resources encompasses 67,581.2 acres.

4.2 Background Research

WBI Energy conducted a Class I literature search at the State Historical Society of North Dakota (SHSND) to identify previously recorded cultural resource sites within a 2-mile-wide corridor encompassing the proposed facilities. The file search identified previously recorded archaeological sites and isolated finds, historic structures, and site leads, as well as previous inventories within the study area.¹⁷

The background research identified 390 previously recorded archaeological sites, site leads, and isolated finds as well as 80 previously recorded historic architectural sites and site leads. Thirty-six of the archaeological resources (including site leads) are within the archaeological survey corridor for the Project, as discussed in section 4.3.1; information on these sites is provided in table 4.2-1. Seven previously recorded architectural sites are within the historic structures survey area for the Project, as discussed in section 4.3.2; information on these sites is provided in table 4.2-2.

¹⁷ Site leads are defined by the state of North Dakota as areas containing cultural resources identified by a landowner or other non-professional; an area with five or less artifacts visible on the surface that may have intact subsurface cultural deposits; or architectural sites that have not been fully recorded due to being located outside of a given project area or where property access has been denied (SHSND, 2018).

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TABLE 4.2-1		
North Bakken Expansion Project Previously Recorded Sites in the Archaeological Survey Corridor		
Site No.	Description	NRHP Eligibility
Tioga-Elkhorn Creek		
32WI1775	Historic artifact scatter	Not eligible
32WI0319	Historic pole barn	Not eligible
32WI0970	Historic depression (dugout)	Not eligible
32WIX044	Prehistoric site lead	Unevaluated
32WI0976	Prehistoric lithic scatter	Not eligible
32WIX0052	Historic site lead	Unevaluated
32MZ0598	Historic features and artifact scatter; prehistoric faunal remains	Not eligible
32MZ2346	Historic homestead	Not eligible
32MZ0144	Historic homestead	Not eligible
32MZ0145	Historic rock pile	Not eligible
32MZ2939	Historic animal shelter and corral	Not eligible
32MZX0379	Historic site lead (Wold Coal Mine)	Unevaluated
32MZX0381	Historic site lead (Skogheim Coal Mine)	Unevaluated
32MZX0187	Prehistoric site lead	Unevaluated
32MZX0079	Historic site lead (Percheron Horse Company)	Unevaluated
Line Section 25 Loop (includes 0.1 mile pipeline replacement)		
32WI2144	Prehistoric stone feature site	Unevaluated
32WI1102	Prehistoric stone feature site	Unevaluated
32WI1103	Prehistoric stone feature site	Unevaluated
32WI1495	Historic artifact scatter/trash dump	Not eligible
32WI1494	Prehistoric stone feature site	Unevaluated
32WI1630	Prehistoric stone feature site	Unevaluated
32WI1497	Historic homestead	Not eligible
32WIX0234	Prehistoric site lead	Unevaluated
32MN1305	Historic well pad and artifacts	Not eligible
32MNX0578	Prehistoric site lead	Unevaluated
32BK0168	Historic features and artifacts	Not eligible
32BKX0259	Prehistoric site lead	Unevaluated
32BKX0258	Prehistoric site lead	Unevaluated
32BKX0254	Prehistoric site lead	Unevaluated
32BKX0580	Prehistoric site lead	Unevaluated
32BKX0572	Prehistoric site lead	Unevaluated
Line Section 30 Loop		
32WI1775	Historic artifact scatter	Not eligible
Tioga Compressor Lateral		
32WI0897	Historic farmstead	Not eligible
32WI1145	Historic feature (grain bin)	Not eligible
Uprate Line Section 25		
32BKX0555	Prehistoric site lead	Unevaluated
Springbrook Plant Receipt Station		
32WIX0358	Prehistoric site lead	Unevaluated

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TABLE 4.2-2		
North Bakken Expansion Project Previously Recorded Sites in the Historic Structures Survey Corridor		
Site No.	Description	NRHP Eligibility
Tioga-Elkhorn Creek		
32MZ2939	Animal shelter and corral	Not eligible
32MZ2405	Bridge	Not Eligible
32MZ3151	Concrete slab bridge	Not eligible
Line Section 25 Loop (includes 0.1 mile pipeline replacement)		
32W11497	Blomquist Homestead	Not eligible
Tioga Compressor Lateral		
32WI0897	Historic farmstead	Not eligible
Robinson Lake Plant Receipt Station		
32MN1338	Granaries and grain bin	Unassessed
Lobell Yard		
32WI0424	Sheds and Butler bins	Not Eligible

4.3 Areas Surveyed

4.3.1 Archaeological Survey

For the archaeological survey, WBI Energy examined a nominal 300-foot-wide corridor along the pipeline routes, a 50-foot-wide corridor along access roads, and the construction footprints for other facilities and staging areas. In several locations, a wider corridor along the pipeline routes was examined to incorporate route or workspace changes, including changes to avoid archaeological sites.

Field methods for the survey consisted of a combination of pedestrian reconnaissance and shovel testing. Pedestrian reconnaissance was conducted in all survey areas along survey transects spaced 15 meters apart. In areas of native prairie, shovel tests were excavated at 15 meter intervals along transects spaced 15 meters apart. In previously disturbed areas with poor surface visibility, shovel tests were excavated every 100 meters along two transects supplemented by judgmental and/or systematic shovel testing on high probability landforms. In locations where ground surface visibility exceeded 25 percent, shovel tests were excavated at the discretion of the crew chief along systematic transects or judgmentally. All methods were consistent with the minimum standards for archaeological survey in North Dakota as described in the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (SHSND, 2018).

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As of this filing, the survey has examined:

- 60.1 of 62.8¹⁸ miles (96 percent) along the Tioga-Elkhorn Creek pipeline;
- 0.3 of 0.3 mile (100 percent) along the Elkhorn Creek-Northern Border pipeline;
- 20.3 of 20.3 miles (100 percent) along the Line Section 25 Loop;
- 8.8 of 9.6 miles (92 percent) along the Line Section 30 Loop;
- 0.5 of 0.5 mile (100 percent) along the Tioga Compressor Lateral;
- the four bore sites for the uprate of Line Section 25;
- the Tioga and Elkhorn Creek Compressor Stations;
- the Lignite Plant Receipt Station and Town Border Station, Norse Plant Receipt Station, Norse Transfer Station, Northern Border Interconnect, Robinson Lake Plant Receipt Station, Springbrook Plant Receipt Station, and Tioga Plant Receipt Station;
- 12 staging areas; and
- 83 of 86 access roads.

As of this filing, 4,188.9 acres of the 4,274.2 acres encompassing the survey area for the Project (98 percent) have been surveyed for archaeological resources.¹⁹ Those portions that have not been surveyed are the result of denied access from the property owners, the presence of crops awaiting harvest, or Project changes identified after surveys were completed. The Project archaeological survey status is summarized by facility in table 4.3.1-1.

¹⁸ This includes the 2.3-mile-long horizontal directional drill crossing of Lake Sakakawea. Neither the U.S. Army Corps of Engineers nor the SHSND required survey of this area.

¹⁹ Of the 1,470.3 acres encompassing the construction footprint for the Project, 1,429.9 acres (97 percent) have been surveyed for archaeological resources.

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TABLE 4.3.1-1				
North Bakken Expansion Project Archaeological Survey Status				
Facility	Milepost		Survey Status	Report ^a
	Start	End		
PIPELINE FACILITIES				
Tioga-Elkhorn Creek	0.0	42.9	Complete	Class III Archaeology Report
	42.9	43.9	Pending ^b	Pending
	43.9	44.8	Complete	Class III Archaeology Report
	44.8	45.0	Pending ^b	Class III Archaeology Report
	45.0	52.7	Complete	Class III Archaeology Report
	52.7	53.9	Complete	Second Class III Archaeology Report
	53.9	57.9	Complete	Class III Archaeology Report
	57.9	58.2	Pending ^b	Pending
	58.2	62.8	Complete	Class III Archaeology Report
Elkhorn Creek-Northern Border	0.3	0.3	Complete	Class III Archaeology Report
Line Section 25 Loop	0.0	20.3	Complete	Class III Archaeology Report
Line Section 30 Loop	0.0	0.6	Complete	Class III Archaeology Report
	0.6	1.4	Pending ^c	Pending
	1.4	9.6	Complete	Class III Archaeology Report
Tioga Compressor Lateral	0.0	0.5	Complete	Class III Archaeology Report
Uprate Line Section 25				
Bore site 1	N/A	N/A	Complete	Class III Archaeology Report
Bore site 2	N/A	N/A	Complete	Class III Archaeology Report
Bore site 3	N/A	N/A	Complete	Class III Archaeology Report
Bore site 4	N/A	N/A	Complete	Class III Archaeology Report
ABOVEGROUND FACILITIES				
Elkhorn Creek Compressor Station	N/A	N/A	Complete	Class III Archaeology Report
Tioga Compressor Station	N/A	N/A	Complete	Class III Archaeology Report
Lignite Town Border and Lignite Plant Receipt Station	N/A	N/A	Complete	Class III Archaeology Report
Norse Plant Receipt Station	N/A	N/A	Complete	Class III Archaeology Report
Norse Transfer Station	N/A	N/A	Complete	Class III Archaeology Report
Northern Border Interconnect	N/A	N/A	Complete	Class III Archaeology Report
Robinson Lake Plant Receipt Station	N/A	N/A	Complete	Class III Archaeology Report
Springbrook Plant Receipt Station	N/A	N/A	Complete	Class III Archaeology Report
Tioga Plant Receipt Station	N/A	N/A	Complete	Class III Archaeology Report
STAGING AREAS				
Boehm Staging Yard	N/A	N/A	Complete	Class III Archaeology Report
Weflen Staging Yard	N/A	N/A	Complete	Class III Archaeology Report
68th Street Yard	N/A	N/A	Complete	Class III Archaeology Report

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TABLE 4.3.1-1					
North Bakken Expansion Project Archaeological Survey Status					
Facility	Milepost		Survey Status	Report ^a	
	Start	End			
CRS Yard	N/A	N/A	Complete	Class III Archaeology Report	
Delta Contractors Yard	N/A	N/A	Complete	Class III Archaeology Report	
Enget Yard	N/A	N/A	Complete	Class III Archaeology Report	
Flatlands Yard 1	N/A	N/A	Complete	Class III Archaeology Report	
Flatlands Yard 2	N/A	N/A	Complete	Class III Archaeology Report	
Lobell Yard	N/A	N/A	Complete	Class III Archaeology Report	
Schmidt Yard	N/A	N/A	Complete	Class III Archaeology Report	
Franz Yard	N/A	N/A	Complete	Class III Archaeology Report	
Aux Sable Yard	N/A	N/A	Complete	Class III Archaeology Report	
ACCESS ROADS					
83 access roads – survey complete	N/A	N/A	Complete	Class III Archaeology Report	
3 access roads – survey pending	N/A	N/A	Pending ^d	Pending	
^a An update to the Class III Archaeology Report is provided under separate cover as appendix 4A-1 and a second report is provided as appendix 4A-2. Addendum reports will be prepared for any areas not surveyed due to denied survey permissions, the presence of crops awaiting harvest, or project changes adopted after the completion of surveys. ^b Survey permission in this area is denied by the landowner. ^c Survey in this area is pending harvest. ^d Recent Project changes.					
Notes: N/A = not applicable					

4.3.2 Geomorphology

WBI Energy identified nine locations along the proposed pipeline routes, each consisting of one or more waterbody crossings and associated alluvial and colluvial surfaces, with the potential to contain deeply buried archaeological sites. These locations are: White Earth Creek Valley, Beaver Creek Valley (two crossings), Missouri River Valley, Tobacco Garden Creek Valley (three crossings), Tributary to Tobacco Garden Creek, and Cherry Creek Valley. Coring and augering was conducted at eight locations to test for the presence of intact buried prehistoric cultural deposits based on the presence of favorable depositional environments of appropriate age. The results and recommendations from this study are summarized in section 4.4.2.

4.3.3 Historic Structures Survey

For the historic structures survey, WBI Energy initially examined a 1-mile-wide corridor (0.5-mile from the centerline) along the pipeline routes, an area which encompasses all of the proposed facilities, staging areas, and access roads for the pipelines as well as potential viewsheds from historic structures near the Project area. The survey also initially examined a 1-mile-wide area around aboveground facilities and staging areas (centered on the facility) outside the survey area for the pipeline facilities. The survey was

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further informed by topography and other field conditions to ensure that all potential resources within 0.5 mile and with line-of-site to Project facilities were identified.

Field methods consisted of a combination of windshield and pedestrian survey to document historic structures in the survey area. All methods were consistent with the minimum standards for historic structures survey in North Dakota as described in the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (SHSND, 2018). As of this filing, the survey has examined:

- 62.8 of 62.8 miles (100 percent) along the Tioga-Elkhorn Creek pipeline;
- 0.3 of 0.3 mile (100 percent) along Elkhorn Creek-Northern Border pipeline;
- 20.3 of 20.3 miles (100 percent) along the Line Section 25 Loop;
- 9.6 of 9.6 miles (100 percent) along the Line Section 30 Loop;
- 0.5 of 0.5 mile (100 percent) along the Tioga Compressor Lateral;
- the four bore sites for the uprate of Line Section 25;
- the Tioga and Elkhorn Creek Compressor Stations;
- the Lignite Plant Receipt Station and Town Border Station; Norse Plant Receipt Station, Norse Transfer Station, Northern Border Interconnect, Robinson Lake Plant Receipt Station, Springbrook Plant Receipt Station, and Tioga Plant Receipt Station;
- 12 staging areas; and
- 86 access roads.

In total, as of this filing, all 67,581.2 acres (100 percent) of the inventory area for historic structures has been surveyed. The Project historic structures survey status is summarized in table 4.3.2-1.

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TABLE 4.3.3-1				
North Bakken Expansion Project Historic Structures Survey Status				
Facility	Milepost		Survey Status	Report ^a
	Start	End		
PIPELINE FACILITIES				
Tioga-Elkhorn Creek	0.0	62.8	Complete	Class III Structures Report
Elkhorn Creek-Northern Border	0.3	0.3	Complete	Class III Structures Report
Line Section 25 Loop	0.0	20.3	Complete	Class III Structures Report
Line Section 30 Loop	0.0	9.6	Complete	Class III Structures Report
Tioga Compressor Lateral	0.5	0.5	Complete	Class III Structures Report
Uprate Line Section 25				
Bore site 1	N/A	N/A	Complete	Class III Structures Report
Bore site 2	N/A	N/A	Complete	Class III Structures Report
Bore site 3	N/A	N/A	Complete	Class III Structures Report
Bore site 4	N/A	N/A	Complete	Class III Structures Report
ABOVEGROUND FACILITIES				
Elkhorn Creek Compressor Station	N/A	N/A	Complete	Class III Structures Report
Tioga Compressor Station	N/A	N/A	Complete	Class III Structures Report
Lignite Town Border and Lignite Plant Receipt Station	N/A	N/A	Complete	Class III Structures Report
Norse Plant Receipt Station	N/A	N/A	Complete	Class III Structures Report
Norse Transfer Station	N/A	N/A	Complete	Class III Structures Report
Northern Border Interconnect	N/A	N/A	Complete	Class III Structures Report
Robinson Lake Plan Receipt Station	N/A	N/A	Complete	Addendum Report ^b
Springbrook Plant Receipt Station	N/A	N/A	Complete	Class III Structures Report
Tioga Plant Receipt Station	N/A	N/A	Complete	Class III Structures Report
STAGING AREAS				
Boehm Staging Yard	N/A	N/A	Complete	Class III Structures Report
Weflen Staging Yard	N/A	N/A	Complete	Class III Structures Report
68th Street Yard	N/A	N/A	Complete	Class III Structures Report
CRS Yard	N/A	N/A	Complete	Class III Structures Report
Delta Contractors Yard	N/A	N/A	Complete	Class III Structures Report
Enget Yard	N/A	N/A	Complete	Class III Structures Report
Flatlands Yard 1	N/A	N/A	Complete	Class III Structures Report
Flatlands Yard 2	N/A	N/A	Complete	Class III Structures Report
Lobell Yard	N/A	N/A	Complete	Addendum Report ^b
Schmidt Yard	N/A	N/A	Complete	Class III Structures Report
Franz Yard	N/A	N/A	Complete	Class III Structures Report ^c
Aux Sable Yard	N/A	N/A	Complete	Class III Structures Report ^c
ACCESS ROADS				
	N/A	N/A	Complete	Class III Structures Report
^a The Class III Structures Report was filed with the February 14, 2020 FERC Application. ^b Within the survey area covered by the Class III Structures Report. ^c The Addendum Report is attached as Appendix 4D. Note: N/A = not applicable				

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4.4 Results of Surveys

4.4.1 Archaeology

4.4.1.1 Private and State Lands

As of this filing, 73 archaeological sites and 23 isolated finds have been documented within the survey area for the Project on state and private lands. Of these, 57 archaeological sites and 22 isolated finds contain prehistoric materials, 5 archaeological sites contain prehistoric and historic materials, and 11 archaeological sites and 1 isolated find contain historic materials. Summary information on the sites is provided in appendix 4B. Recommendations for the sites are as follows:

- Twenty-three sites and all 23 isolated finds are recommended ineligible for listing in the NRHP. No additional work at these sites is recommended.
- Forty-six sites remain unevaluated for listing in the NRHP. Of these:
 - Twenty-one sites are located greater than 100 feet from the proposed construction workspace for the Project. No further work at these sites is recommended at this time. WBI Energy suggests a finding of “no effect” for the 21 sites.
 - Twenty-five sites are located between 50 and 100 feet from the proposed construction workspace for the Project. Fencing of the construction corridor and monitoring in the vicinity of the sites is recommended. With implementation of these measures, WBI Energy suggests a finding of “no effect” for the 25 sites.
- Four sites are recommended eligible for listing in the NRHP. Of these:
 - One site is located greater than 100 feet from the proposed construction workspace for the Project. No further work at this site is recommended at this time. WBI Energy suggests a finding of “no effect” for the site.
 - Two sites are located between 50 and 100 feet from the proposed construction workspace for the Project. Fencing of the construction corridor and monitoring in the vicinity of the sites is recommended. With implementation of these measures, WBI Energy suggests a finding of “no effect” for the two sites.
 - One site is located within 5 feet from the proposed construction workspace for the Project. Fencing of the construction corridor and monitoring in the vicinity of the site is recommended. WBI Energy suggests a finding of “no adverse effect” for this resource.

An updated Class III inventory report describing the results of a majority of the survey completed to date is provided as appendix 4A-1.²⁰ The updated Class III report includes a set of aerial-based maps depicting the construction footprint, survey corridor, and survey results. Because appendix 4A-1 contains location,

²⁰ WBI Energy filed a draft Class III inventory report with survey results from the 2019 field season with its February 14, 2020 FERC Application. The USFS, USACE, and SHSND each provided comments on the report to WBI Energy in the spring of 2020. In follow-up discussions, the SHSND requested that WBI Energy revise the Class III report both to address agency comments and incorporate the results of the 2020 fieldwork. In accordance with this request, the inventory report provided as appendix 4A-1 provides results from the 2019 and 2020 seasons and addresses agency comments on the previous report. The new report replaces the previous report filed with the application.

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character, and ownership information for archaeological sites, it has been filed separately as Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV]. The report is marked "CUI//PRIV – DO NOT RELEASE".

Approximately 1.1 miles of private land along the survey route for the Tioga-Elkhorn Creek pipeline is presented in a separate report. This report is provided as Appendix 4A-2. Because this report contains location, character, and ownership information for archaeological sites, it has been filed separately and is marked "CUI//PRIV – DO NOT RELEASE".

WBI Energy will prepare a monitoring and avoidance plan for the Project incorporating the recommendations of the archaeological inventory. WBI Energy anticipates filing the monitoring plan in October 2020. Copies of the monitoring and avoidance plan also will be provided to the SHSND and applicable land managing agencies for review.

4.4.1.2 U.S. Army Corps of Engineers Lands

Approximately 2.7 miles of the Tioga-Elkhorn Creek pipeline, between MPs 23.1 and 23.8, are on federal lands managed by the U.S. Army Corps of Engineers (COE), Garrison District. These lands, which include 2.4 miles under Lake Sakakawea and 0.3 mile along the lakeshore, will be crossed by horizontal directional drill.

Survey of the lands along the lakeshore identified one prehistoric site, and one multicomponent (prehistoric and historic) site was revisited. Summary information on these sites is provided in appendix 4B. Neither site has been evaluated for listing in the NRHP. Additional testing is planned to occur at one site (32WI976) this season. As the other site (32MZ598) is located greater than 100 feet from the Project area, no further work is recommended and a finding of “no effect” is suggested.

Survey results for the COE lands are discussed in the updated Class III report provided under separate cover as appendix 4A-1. Testing results for 32WI976 will be provided in an addendum report.

4.4.1.3 U.S. Forest Service Lands

Approximately 2.1 miles of the Tioga-Elkhorn Creek pipeline, from MPs 27.3 to 27.7 and 28.2 to 29.9, are on federal lands managed by the U.S. Forest Service (USFS) in the Little Missouri National Grassland. Multiple routes and/or expanded inventory corridors were examined on USFS lands to avoid archaeological sites or resolve other routing constraints, such as land use conflicts, other proposed pipelines, and habitat for sensitive species.

Survey of USFS lands identified 23 archaeological sites, of which 16 sites contain prehistoric features; two sites contain prehistoric and historic artifacts and/or features; and five sites contain historic artifacts and/or features. Summary information on the sites is provided in appendix 4B. Recommendations for these sites are as follows:

- Three sites are recommended ineligible for listing in the NRHP. No additional work at these sites is recommended.
- Twenty sites remain unevaluated for listing in the NRHP. Of these:

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- Fourteen sites are located greater than 100 feet from the proposed construction workspace for the Project. No further work at these sites is recommended at this time. WBI Energy suggests a finding of “no effect” for the 14 sites.
- Six sites are located between 50 and 100 feet from the proposed construction Project workspace for the Project. Fencing of the construction corridor and monitoring in the vicinity of the sites is recommended. With implementation of these measures, WBI Energy suggests a finding of “no effect” for the six sites.

Survey results for USFS lands are discussed in the updated Class III report provided as appendix 4A-1.²¹

The updated Class III report includes information on one site (32MZ2347) located adjacent to, but outside of, the inventory area for the Project on USFS lands. The information on this site, which was not relocated, was included in the report at the request of the USFS. This site is included in the 23 sites identified for USFS lands.

WBI Energy will prepare a monitoring and avoidance plan for the Project incorporating the recommendations of the archaeological inventory. WBI Energy anticipates filing the monitoring plan in October 2020. Copies of the monitoring and avoidance plan also will be provided to the SHSND and USFS for review.

4.4.2 Geomorphology

As noted in section 4.3.1.1, coring and augering was conducted at eight of nine waterbody crossings and associated alluvial and fluvial deposits to test for the presence of intact buried prehistoric cultural remains. Other than bison bone fragments that cannot be attributed to past human behavior, the only artifact encountered is a piece of chert debitage recovered from a core in Beaver Creek Valley. Based on observations and assessments of the auger and core samples, monitoring (trench inspection) at eight of the nine crossings is recommended due to their potential to contain buried archaeological deposits at depths that will be impacted by pipeline trenching. A report describing the results of the investigation is attached as Appendix 4E. Because appendix 4E contains location, character, and ownership information for archaeological sites, it has been filed separately as Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV]. The report is marked "CUI//PRIV – DO NOT RELEASE".

The monitoring and avoidance plan to be prepared for the Project will include the trench inspections recommended by the geomorphological assessment.

²¹ A separate, standalone, draft survey report for USFS lands was provided with the February 14, 2020 FERC Application. The USFS and SHSND provided comments on this report to WBI Energy in the spring of 2020. The USFS concurred with the approach recommended by the SHSND that WBI Energy revise the main Class III inventory report for the Project both to address agency comments and incorporate the results of the 2020 survey. In addition, the USFS concurred that the survey results for USFS lands could be included in the main report provided that USFS lands are discussed separately. Section 5.5 of the updated Class III inventory report provided as Appendix 4A-1 addresses agency comments and incorporates the 2020 survey results for USFS lands. This report replaces the previous standalone report provided with WBI Energy's application.

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4.4.3 Historic Structures

4.4.3.1 Private and State Lands

Eighteen historic structures and other architectural resources have been documented within the survey corridor along the pipeline routes and in other survey areas for the Project on private and state lands. Of these, 11 structures are recommended as unevaluated for listing in the NRHP, but the Project will have no adverse effect on these resources and no additional work at the structures is recommended. Seven structures are recommended not eligible for listing in the NRHP; no further work at these structures is recommended.

WBI Energy filed a Class III report describing the survey results with its February 14, 2020 FERC Application. An addendum survey report is provided with this filing as Appendix 4D.

4.4.3.2 U.S. Army Corps of Engineers Lands

No historic architectural resources were documented on COE lands.

4.4.3.3 U.S. Forest Service Lands

No historic architectural resources were documented on USFS lands.

4.4.4 Cemetery

One historic grave marker (32MZ3330) was observed in an agricultural field approximately 90 feet from the edge of the archaeological survey corridor along the Tioga-Elkhorn Creek pipeline. According to the landowner, the grave contains the remains of a single, unidentified individual. The grave will not be affected by construction of the pipeline. This site is discussed in the updated Class III Archaeology Report provided under separate cover as appendix 4A-1.

4.5 Schedule for Completing Outstanding Studies

WBI Energy anticipates completing site testing at 32WI976 and additional survey of access roads and minor facility changes in September 2020 and filing an addendum report in October 2020. Survey of parcels with denied access from the landowner will be completed in 2021. An addendum report for this work will be filed after surveys are complete.

4.6 Status of Consultations and Communications

4.6.1 Federal Land Managing Agencies

4.6.1.1 U.S. Army Corps of Engineers

Table 4.6.1-1 lists and summarizes WBI Energy's communications to-date with the COE regarding cultural resources. Most of this correspondence is previously filed as indicated in the table; the remainder will be provided in a supplemental filing.

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TABLE 4.6.1-1		
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Summary of Communications with the U.S. Army Corps of Engineers		
Date	Summary	Filing Date
4-15-19	Introductory Project letter from WBI Energy to the COE.	2-14-20
5-3-19	Email from WBI Energy to the COE requesting a blank application form for an ARPA survey permit for COE-managed lands.	2-14-20
5-8-19	Email from the COE to WBI Energy transmitting a blank application form for an ARPA survey permit for COE-managed lands.	2-14-20
5-8-19	Email from the COE to WBI Energy transmitting a shape file for COE-managed lands.	2-14-20
5-9-19	Email from WBI Energy to the COE transmitting a completed application for an ARPA survey permit.	2-14-20
5-20-19	Email from WBI Energy to the COE transmitting a shape file for the Project centerline.	2-14-20
5-20-19	Email from the COE to WBI Energy commenting on the application for an ARPA survey permit.	2-14-20
5-20-19	Email from WBI Energy to the COE transmitting an amended ARPA permit application.	2-14-20
7-2-19	Email from WBI Energy to the COE inquiring about the status of the ARPA permit application.	2-14-20
7-3-19	Call from WBI Energy to the COE to discuss COE review of the ARPA permit application.	2-14-20
7-11-19	Call from WBI Energy to the COE to discuss COE review of the ARPA permit application and tribal communications for the Project.	2-14-20
7-17-19	Letter from WBI Energy to the COE inviting the COE to attend the Project open houses.	2-14-20
7-17-19	Letter from WBI Energy to the COE inviting the COE to attend the Project open houses.	2-14-20
8-2-19	Email from WBI Energy to the COE transmitting a link to WBI Energy's correspondence to date with federally recognized Indian tribes as posted to the FERC docket for the Project.	2-14-20
8-5-19	Email from the COE to WBI Energy regarding the survey area identified in the ARPA permit application.	2-14-20
8-5-19	Email from WBI Energy to the COE regarding the survey area identified in the ARPA permit application.	2-14-20
8-7-19	Email from the COE to WBI Energy regarding the survey area and tribal participation in surveys on COE lands and transmitting an amended permit application and map.	2-14-20
8-8-19	Email from WBI Energy to the COE concurring with the amended permit application for COE-managed lands.	2-14-20
8-19-19	Email from WBI Energy to the COE inquiring about the status of the ARPA permit for the archaeological survey on COE lands.	2-14-20
8-20-19	Email from WBI Energy to the COE inquiring about the status of the ARPA permit for the archaeological survey on COE lands.	2-14-20
8-20-19	Email from the COE to WBI Energy regarding the status of the ARPA permit for the archaeological survey on COE lands.	2-14-20
8-22-19	Email from the COE to WBI Energy regarding tribal participation in surveys on COE lands.	2-14-20
8-29-19	Email from WBI Energy to the COE regarding tribal participation in in surveys on COE lands.	2-14-20
9-5-19	Phone call from the COE to WBI Energy regarding the status of the ARPA permit and tribal participation in surveys on COE lands.	2-14-20
9-9-19	Email from WBI Energy to the COE regarding the ARPA permit for the archaeological survey on COE lands.	2-14-20
9-10-19	Email from the COE to WBI Energy regarding the ARPA permit for the archaeological survey on COE lands	2-14-20
9-13-19	Email from WBI Energy to the COE regarding the ARPA permit for the archaeological survey on COE lands	2-14-20
9-13-19	Phone call from the COE to WBI Energy regarding the status of the ARPA permit and tribal participation in surveys on COE lands	2-14-20

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TABLE 4.6.1-1		
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Summary of Communications with the U.S. Army Corps of Engineers		
Date	Summary	Filing Date
9-13-19	Email from WBI Energy to the COE regarding the ARPA permit for the archaeological survey on COE lands	2-14-20
9-15-19	Letter from the COE to WBI Energy transmitting an approved ARPA permit for the archaeological survey on COE lands	2-14-20
9-17-19	Call from WBI Energy to the COE regarding survey logistics and tribal participation in the survey	2-14-20
9-19-19	Email from WBI Energy to the COE (and Rosebud Sioux Tribe) regarding survey logistics	2-14-20
9-24-19	Email from WBI Energy to the COE regarding survey logistics	2-14-20
12-11-19	Email from WBI Energy to the COE regarding reporting procedures	2-14-20
12-16-19	Email from the COE to WBI Energy regarding reporting procedures	2-14-20
12-16-19	Call from WBI Energy to the COE regarding reporting procedures	2-14-20
12-16-19	Follow-up email from WBI Energy to the COE confirming reporting procedures	2-14-20
2-14-20	Letter from WBI Energy to the COE transmitting the Class III Archaeology Report, standalone Class III Archaeology Report for USFS lands, and Class III Historic Structures Reports	2-14-20
4-30-20	Minutes from a meeting between WBI Energy and the COE regarding the proposed testing methods for 32WI976 and tribal participation in the testing.	7-8-20
5-12-20	Email from WBI Energy to the COE regarding tribal participation in field surveys.	7-8-20
6-18-20	Email from WBI Energy to the COE transmitting a copy of a site testing plan and the SHSND's comments on the plan. (Note: WBI Energy filed the referenced attachments in this email on 7-8-20).	7-28-20
7-2-20	Call from the COE to WBI Energy regarding state permitting requirements for an upcoming gradiometer survey at 32WI976.	7-28-20
7-2-20	Call from the COE to WBI Energy regarding state permitting requirements for an upcoming gradiometer survey at 32WI976.	7-28-20
7-6-20	Email from WBI Energy to the COE regarding state permitting requirements for an upcoming gradiometer survey at 32WI976.	7-28-20
7-7-20	Call from the COE to WBI Energy regarding weather for an upcoming gradiometer survey at 32WI976.	7-28-20
7-7-20	Call from the COE to WBI Energy regarding weather for an upcoming gradiometer survey at 32WI976.	7-28-20
7-13-20	Email from WBI Energy to the COE regarding the results of a gradiometer survey at 32WI976.	7-28-20
7-13-20	Email from the COE to WBI Energy regarding the results of a gradiometer survey at 32WI976.	7-28-20
7-14-20	Email from WBI Energy to the COE regarding the results of a gradiometer survey at 32WI976.	7-28-20
7-14-20	Email from the COE to WBI Energy regarding the results of a gradiometer survey at 32WI976.	7-28-20
7-14-20	Email from WBI Energy to the COE regarding the results of a gradiometer survey at 32WI976.	7-28-20
7-22-20	Telephone call from the COE to WBI Energy to discuss the results of the gradiometer survey conducted at site 32WI976 and revisions to the site testing plan.	Pending
7-27-20	Email from WBI Energy to the COE regarding the results of a gradiometer survey and the testing plan for 32WI976.	Pending
7-30-20	Telephone calls between the COE and WBI Energy to discuss the testing plan for 32WI976 and agency and tribal review of the plan.	Pending
7-31-20	Email from WBI Energy to the COE transmitting an updated testing plan for 32WI976.	Pending
8-5-20	Telephone call from the COE to WBI Energy regarding the testing plan for 32WI976.	Pending
9-1-20	Telephone call from the COE to WBI Energy to discuss site testing at 32WI976.	Pending
9-3-20	Email from WBI Energy to the COE providing an updated testing plan for 32WI976.	Pending

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4.6.1.2 U.S. Forest Service

Table 4.6.1-2 lists and summarizes WBI Energy’s communications to-date with the USFS regarding cultural resources. All of the correspondence is previously filed as indicated in the table.

TABLE 4.6.1-2		
North Bakken Expansion Project Summary of Communications with the U.S. Forest Service		
Date	Summary	Filing Date
4-15-19	Introductory Project letter from WBI Energy to the USFS.	2-14-20
5-21-19	Call from WBI Energy to the USFS requesting a blank application form for an ARPA survey permit for USFS managed lands.	2-14-20
5-21-19	Email from the USFS to WBI Energy transmitting a blank application form for an ARPA survey permit for USFS managed lands.	2-14-20
5-21-19	Email from WBI Energy to the USFS transmitting a completed application for an ARPA survey permit.	2-14-20
5-29-19	Call from the USFS to WBI Energy commenting on the application for an ARPA survey permit.	2-14-20
5-29-19	Email from WBI Energy to the USFS requesting a modification to the survey methods to be authorized under the ARPA survey permit.	2-14-20
5-29-19	Email from the USFS to WBI Energy acknowledging the request for a modification of the survey methodology to be authorized under the ARPA survey permit.	2-14-20
6-10-19	Email from WBI Energy to the USFS transmitting a Special Use Application Processing Request.	2-14-20
7-3-19	Email from WBI Energy to the USFS inquiring about the status of the ARPA permit application.	2-14-20
7-3-19	Email from the USFS to WBI Energy regarding the status of USFS review of the ARPA permit application.	2-14-20
7-17-19	Letter from WBI Energy to the USFS inviting the USFS to attend the Project open houses.	2-14-20
7-17-19	Letter from WBI Energy to the USFS inviting the USFS to attend the Project open houses.	2-14-20
7-30-19	Letter from the USFS to WBI Energy transmitting a Special Use Cultural Resource Permit for signature.	2-14-20
8-19-19	Email from WBI Energy to the USFS regarding the status of the ARPA Permit.	2-14-20
8-20-19	Letter dated 8-15-19, received 8-20-19, transmitting a Special Use Cultural Resource Permit for the Project.	2-14-20
8-20-19	Email from WBI Energy to the USFS providing notice of the start of the archaeological survey on USFS land.	2-14-20
8-22-19	Email from the USFS to WBI Energy acknowledging the start of the archaeological survey on USFS land.	2-14-20
9-23-19	Email from WBI Energy to the USFS regarding the completion of the archaeological survey on USFS lands and the results of the survey.	2-14-20
9-24-19	Email from WBI Energy regarding survey of a route change on USFS lands.	2-14-20
9-24-19	Email from the USFS to WBI Energy regarding survey of a route change on USFS lands.	2-14-20
12-11-19	Email from WBI to the USFS regarding reporting procedures.	2-14-20
12-16-19	Email from the USFS to WBI Energy regarding reporting procedures.	2-14-20

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TABLE 4.6.1-2		
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Summary of Communications with the U.S. Forest Service		
Date	Summary	Filing Date
12-17-19	Call from WBI Energy to the USFS regarding reporting procedures; voicemail message.	2-14-20
12-17-19	Call from the USFS to WBI Energy confirming reporting procedures.	2-14-20
2-14-20	Letter from WBI Energy to the USFS transmitting the Class III Archaeology Report, standalone Class III Archaeology Report for USFS lands, and Class III Historic Structures Reports.	2-14-20
4-23-20	Email from WBI Energy to the USFS requesting an application for a 2020 archaeological survey permit.	7-8-20
4-27-20	Email from the USFS to WBI Energy transmitting an application for a 2020 archaeological survey permit.	7-8-20
5-1-20	Teleconference between WBI Energy and the USFS to discuss the site testing plans for 32MZ2346 and 32MZ3324 and the USFS comments on the Class III report.	7-8-20
5-6-20	Email from WBI Energy to the USFS transmitting digital copy of an application for a survey permit, including testing plans for 32MZ2346 and 32MZ3324. (Note: The permit application contains location information for archaeological sites. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-8-20
5-7-20	Letter from WBI Energy to the USFS transmitting paper copy of an application for a survey permit, including testing plans for 32MZ2346 and 32MZ3324. (Note: The permit application contains location information for archaeological sites. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-8-20
5-12-20	Email from WBI Energy to the USFS regarding tribal participation in field surveys.	7-8-20
5-12-20	Email from the USFS to WBI Energy regarding tribal participation in field surveys.	7-8-20
6-2-20	Email from WBI Energy to the USFS regarding the status of an application for a 2020 archaeological survey permit.	7-8-20
6-2-20	Email from the USFS to WBI Energy regarding the status of an application for a 2020 archaeological survey permit.	7-8-20
6-10-20	Email from WBI Energy to the USFS regarding the status of an application for a 2020 archaeological survey permit.	7-28-20
6-10-20	Email from the USFS to WBI Energy regarding the status of an application for a 2020 archaeological survey permit.	7-28-20
6-18-20	Email from WBI Energy to the USFS regarding the use of temporary flagging to mark site boundaries for pipeline routing.	7-28-20
6-23-20	Email from WBI Energy to the USFS regarding the use of temporary flagging to mark site boundaries for pipeline routing.	7-28-20
6-23-20	Email from the USFS to WBI Energy approving the use of temporary flagging to mark site boundaries for pipeline routing.	7-28-20
6-23-20	Email from WBI Energy to the USFS regarding the use of temporary flagging to mark site boundaries for pipeline routing.	7-28-20
7-9-20	Calls from WBI Energy to the USFS regarding the 2020 archaeological survey permit.	7-28-20
7-10-20	Email from WBI Energy to the USFS transmitting a map of the survey area on USFS lands.	7-28-20
7-10-20	Call from WBI Energy to the USFS regarding the 2020 archaeological survey permit.	7-28-20
7-10-20	Email from the USFS transmitting the 2020 archaeological survey permit number.	7-28-20
7-11-20	Email from WBI Energy to the USFS acknowledging receipt of the 2020 archaeological survey permit number.	7-28-20

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4.6.2 State Historic Preservation Office

Table 4.6.2-1 lists and summarizes WBI Energy’s communications to-date with the SHSND. Most of this correspondence is previously filed as indicated in the table; the remainder will be provided in a supplemental filing.

TABLE 4.6.2-1		
North Bakken Expansion Project		
Summary of Communications with the State Historical Society of North Dakota		
Date	Summary	Filing Date
4-15-19	Introductory Project letter from WBI Energy to the SHSND.	2-14-20
5-15-19	Letter from WBI Energy to the SHSND transmitting a survey work plan for review.	2-14-20
6-5-19	Letter from the SHSND to WBI Energy providing comments on the survey work plan.	2-14-20
6-14-19	Phone call from WBI Energy to the SHSND to discuss the archaeological survey methodology for the Project.	2-14-20
6-14-19	Email from WBI Energy to the SHSND proposing a change in the archaeological survey methodology for the Project.	2-14-20
6-14-19	Email from WBI Energy to the SHSND modifying a proposed change in the archaeological survey methodology for the Project.	2-14-20
6-19-19	Email from WBI Energy to the SHSND regarding a proposed change in the archaeological survey methodology for the Project.	2-14-20
6-19-19	Email from the SHSND to WBI Energy approving a proposed change in the archaeological survey methodology for the Project.	2-14-20
7-17-19	Letter from WBI Energy to the SHSND inviting the SHSND to attend the Project open houses.	2-14-20
7-23-19	Phone call from WBI Energy to the SHSND regarding Site 32WI2352.	2-14-20
7-23-19	Email from WBI Energy to the SHSND regarding Site 32WI2352.	2-14-20
7-23-19	Email from WBI Energy to the SHSND transmitting a shape file for Site 32WI2352.	2-14-20
7-23-19	Phone call from the SHSND to WBI Energy regarding Site 32WI2352.	2-14-20
7-23-19	Email from the SHSND to WBI Energy regarding Site 32WI2352.	2-14-20
7-25-19	Email from WBI Energy to the SHSND regarding Site 32WI2352.	2-14-20
9-3-19	Phone call from the SHSND to WBI Energy requesting a shapefile for features mapped within 32WI2352.	2-14-20
9-3-19	Email from WBI Energy to the SHSND transmitting a shapefile for features mapped within 32WI2352.	2-14-20
1-6-20	Email from WBI Energy to the SHSND regarding Site 32WI2352.	2-14-20
1-8-20	Email from the SHSND to WBI Energy regarding Site 32WI2352.	2-14-20
1-9-20	Email from WBI Energy to the SHSND regarding Site 32WI2352.	2-14-20
2-14-20	Letter from WBI Energy to the SHSND transmitting the Class III Archaeology Report, standalone Class III Archaeology Report for USFS lands, and Class III Historic Structures Reports.	2-14-20
3-2-20	Phone call from WBI Energy to the SHSND regarding site avoidance and testing measures.	4-20-19
3-19-20	Phone call from the SHSND to WBI Energy to discuss Project impacts on Site 32WI2352 and site avoidance and testing measures.	4-20-19
3-19-20	Email from WBI Energy to the SHSND providing minutes from the 3-19-20 call for review.	4-20-19
4-9-20	Email from WBI Energy to the SHSND regarding the status of the SHSND’s review of the Class III survey reports for the Project.	4-20-19

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TABLE 4.6.2-1		
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Summary of Communications with the State Historical Society of North Dakota		
Date	Summary	Filing Date
4-9-20	Email from the SHSND indicating that comments on the Class III survey reports for the Project are pending.	4-20-19
4-15-20	Letter from the SHSND to WBI Energy transmitting comments on the Class III survey reports for the Project.	7-8-20
4-28-20	Minutes from a teleconference between WBI Energy and the SHSND to review comments on the Class III reports for the Project.	7-8-20
4-28-20	Email from WBI Energy to the SHSND transmitting methods for geomorphological investigations and confirming the role of the Bureau of Land Management on the Project.	7-8-20
4-30-20	Email from WBI Energy to the SHSND transmitting a copy of the minutes from the teleconference held on 4-28-20.	7-8-20
5-4-20	Email from WBI Energy to the SHSND regarding the transmittal of a site testing plan for the Project.	7-8-20
5-4-20	Letter from WBI Energy to the SHSND transmitting a site testing plan for the project. (Note: The site testing plan contains location information for archaeological sites. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-8-20
5-6-20	Email from the SHSND to WBI Energy acknowledging receipt of the site testing plan.	7-8-20
5-6-20	Email from the SHSND to WBI Energy regarding the comments on the Class III survey reports.	7-8-20
5-22-20	Email from WBI Energy to the SHSND transmitting a methods statement for the tribal survey of the Project area.	7-8-20
6-2-20	Email from WBI Energy to the SHSND regarding the site testing plan.	7-8-20
6-3-20	Email from the SHSND commenting on the site testing plan.	7-8-20
6-9-20	Email from WBI Energy to the SHSND acknowledging receipt of comments on the site testing plan.	7-8-20
6-11-20	Email from WBI Energy to the SHSND regarding the potential for impacts on 32MZ3313. (Note: This email contains location information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
6-17-20	Email from WBI Energy to the SHSND regarding recent disturbances to 32WI2390 (construction of a pipeline) and the discovery of stone features at the site. (Note: This email contains location and character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
6-25-20	Teleconference to review recent findings at 32WI2390. (Note: This email contains location and character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
6-26-20	Telephone call from WBI Energy to the SHSND (voice mail message) providing notification of the discovery of human remains at 32MZ3313.	7-28-20
6-26-20	Email from WBI Energy to the SHSND regarding the discovery of human remains during site testing at 32MZ3313. (Note: This email contains character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
6-26-20	Telephone call from WBI Energy to the SHSND (SHPO) regarding the discovery of human remains at 32WI3313.	7-28-20
6-26-20	Telephone call from the SHSND (state archaeologist) to WBI Energy regarding the discovery of human remains at 32MZ3313.	7-28-20
6-26-20	Site visit from the SHSND (state archaeologist) to 32MZ3313. (Note: A summary of this meeting was included with WBI Energy's supplemental filing on 7-8-20 (Accession No. 20200708-5069).	7-8-20

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TABLE 4.6.2-1		
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Summary of Communications with the State Historical Society of North Dakota		
Date	Summary	Filing Date
6-29-20	Site visit from the SHSND (state archaeologist) to 32MZ3313. (Note: A summary of this meeting was included in WBI Energy's supplemental filing on 7-8-20 (Accession No. 20200708-5069).	7-8-20
6-30-20	Telephone call from the SHSND (state archaeologist) to review the findings from the site visit to 32MZ3313 on 6-29-20. (Note: This email contains character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
7-1-20	Email from WBI Energy regarding a projectile point recovered from 32MZ3313. (Note: This email contains character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
7-1-20	Email from the SHSND to WBI Energy regarding the discovery of human remains at 32MZ3313. (Note: This email contains character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
7-2-20	Emails to and from the SHSND regarding site testing completed at 32WI2352 in 2019 for another pipeline project (unassociated with the North Bakken Expansion Project).	7-28-20
7-2-20	Telephone call from the SHSND to WBI Energy regarding state permit requirements for a gradiometer survey at 32WI976.	7-28-20
7-4-20	Email from WBI Energy to the SHSND regarding a projectile point recovered from 32MZ3313. (Note: This email contains character information for an archaeological site. It has been filed under separate cover and is labelled "CUI//PRIV – DO NOT RELEASE.")	7-28-20
7-6-20	Email from WBI Energy to the SHSND and Assiniboine and Sioux Tribes regarding site testing completed at 32WI2352 in 2019 for another pipeline project (unassociated with the North Bakken Expansion Project).	7-28-20
7-6-20	Email from WBI Energy to the SHSND regarding permit requirements for a gradiometer survey at 32WI976.	7-28-20
7-6-20	Email from the SHSND to WBI Energy regarding permit requirements for a gradiometer survey at 32WI976.	7-28-20
8-25-20	Teleconference between WBI Energy and the SHSND to discuss reporting and site form submittal.	Pending
8-26-20	Telephone call from WBI Energy to the SHSND to discuss the recordation of archaeological sites and cultural heritage sites and effects assessments for the Project.	Pending
9-4-20	Telephone call from WBI Energy to the SHSND to discuss methodology for site testing at 32WI976.	Pending

4.6.3 Federally Recognized Indian Tribes

WBI Energy identified the following 13 federally recognized Indian tribes for communications on the Project:

- Standing Rock Sioux Tribe
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation
- Turtle Mountain Band of Chippewa Indians
- Three Affiliated Tribes of the Fort Berthold Reservation
- Spirit Lake Sioux Tribe
- Yankton Sioux Tribe

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- Northern Cheyenne Tribe
- Cheyenne River Sioux Tribe
- Assiniboine and Sioux Tribes of the Fort Peck Reservation
- Rosebud Sioux Tribe
- Oglala Sioux Tribe
- Northern Arapaho Tribe of Wind River Indian Reservation
- Fort Belknap Indian Community

Appendix 4F itemizes and describes WBI Energy’s communications to-date with each tribe. All of the correspondence is previously filed as indicated in the appendix.

4.6.3.1 Tribal Participation in Field Surveys

During the 2019 field season, three tribes expressed interest in participating in surveys: Rosebud Sioux Tribe, Assiniboine & Sioux Tribes, and Fort Belknap Indian Community. Only the Rosebud Sioux Tribe joined the survey effort. A tribal cultural specialist from this tribe monitored survey activities at the end of the mobilization between September 25 and October 16, 2019. The survey at this time examined short segments of pipeline routes and reroutes, additional temporary workspace, and access roads. The tribal cultural specialist was present for site delineation activities at nine sites: 32MZ598, 32MZ3314, 32MZ3315, 32MZ3318, 32MZ3222, 32WI976, 32WI2389, 32WI2390, and 32WI2392.

Prior to the 2020 field season, WBI Energy retained Beaver Creek Archaeology (BCA) to coordinate tribal participation in surveys and site testing. BCA contacted the 13 tribes, each of whom expressed an interest in participating in fieldwork or requested ongoing updates regarding the Project. Tribal cultural specialists from four tribes—Assiniboine & Sioux Tribes, Rosebud Sioux Tribe, Standing Rock Sioux Tribe, and Turtle Mountain Band of Chippewa Indians—monitored fieldwork. Two specialists from the Rosebud Sioux Tribe deployed, one of whom worked on behalf of the Sisseton Wahpeton Oyate Tribe.

The tribal cultural specialists monitored all survey, delineation, and testing activities completed in 2020, which included site testing at select sites and survey of route changes and other facility modifications. Additionally, the tribal cultural specialists revisited the prehistoric stone feature sites identified and delineated in 2019. BCA prepared weekly summaries of the work completed by the tribal cultural specialists for the duration of the mobilization. Appendix 4G summarizes the participation of tribal cultural specialists in delineation, testing, and revisits by site in 2020.

BCA assisted the tribal cultural specialists with documentation of finds as cultural heritage sites, as appropriate, and completed cultural heritage forms for these resources. The results of this work will be presented in a separate, stand-alone report. WBI Energy anticipates filing this report in October 2020.

Copies of correspondence between BCA and tribes were previously filed on July 8 and 28, 2020. Copies of unfiled correspondence will be provided in a supplemental filing.

4.7 Unanticipated Discoveries Plans

WBI Energy filed an unanticipated discoveries plan for the private, state, and federal lands crossed by the Project with the February 14, 2020 FERC Application. An updated plan is provided in appendix 1F of

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Resource Report 1. The plan is also included as an attachment to the Class III Archaeology Report provided as Appendix 4A-1.

4.8 Cumulative Impacts

Section 1.10 of Resource Report 1 defines a cumulative impact and describes the general scope of the cumulative impact analysis. This section describes the potential cumulative impacts on cultural resources from the Project combined with the reasonably foreseeable future actions (RFFAs) identified in appendix 1J and figure 1.10-1 of Resource Report 1. The location, proposed schedule, and a description of each RFFA are provided in appendix 1J.

As described in table 1.10-1 of Resource Report 1, the geographic scope for potential direct cumulative impacts on cultural resources includes areas subject to ground disturbance, while the APE for indirect effects (visual or audible) includes aboveground ancillary facilities or other Project elements that are visible from historic properties in which the setting contributes to their NRHP eligibility. Cumulative impacts on cultural resources would only occur if RFFAs affect the same historic properties as the Project.

RFFAs that could affect archaeological sites or historic structures within the APEs for cumulative impacts for the Project include the Aurora Wind Electric Transmission Line; Gunslinger Federal and Gladstone Oil and Gas Well Pad Project; Cenex Pipeline; and Western Area Water Supply Project. Each of these projects overlap with the Project APEs for archaeological sites and historic structures. An assessment of the potential for cumulative effects on historic properties from each of these RFFAs is provided below.

- Aurora Wind Electric Transmission Line: No archaeological sites or historic structures are located within the areas of overlap between this project and the APEs for the Project. Therefore, there is no potential for cumulative impacts on cultural resources in this area.
- Gunslinger Federal and Gladstone Oil and Gas Well Pad Project: No archaeological sites or historic structures are located within the areas of overlap between this project and the APEs for the Project. Therefore, there is no potential for cumulative impacts on cultural resources in this area.
- Cenex Pipeline: No archaeological sites or historic structures are located within the areas of overlap between this project and the APEs for the Project. Therefore, there is no potential for cumulative impacts on cultural resources in this area.
- Western Area Water Supply Project: No archaeological sites or historic structures are located within the areas of overlap between the water pipeline routes proposed for this project and the APEs for the Project. Therefore, there is no potential for cumulative impacts on cultural resources in these areas.

Based on the above discussion, cumulative impacts on cultural resources are not anticipated.

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5.0 UPDATES TO RESOURCE REPORT 5 – SOCIOECONOMICS

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

5.2 Socioeconomic Impact Analysis and Mitigation

5.2.1 Population

WBI Energy anticipates that the maximum workforce for construction of the proposed Project will be about 450 people. Construction of the pipeline facilities will be accomplished using three construction spreads with a peak temporary workforce of approximately 350 people and an average of approximately 250 people. The workforce will consist of local residents, commuters, and workers who will temporarily relocate to the Project area. Construction of the aboveground facilities will require an average temporary workforce of about 95 people (75 for compressor stations and 20 to construct an upgrade various delivery, receipt, and transfer stations), expected to be a mix of local residents and workers temporarily relocated to the Project area. Following construction, WBI Energy anticipates that four new permanent employees will be required to assist with operation and maintenance of the proposed facilities.

Construction of the Project will result in a temporary increase in the population of the Project area. A portion of the construction workforce will be non-local skilled labor that will reside in the Project area during construction and then move out once construction is complete. Pending receipt of the necessary permits and approvals, WBI Energy anticipates that the Project construction period will be from March 2021 through the fall of 2021. WBI anticipates that all facilities will be placed in service in November 2021. Consequently, there will be no long-term significant impacts on population resulting from the Project.

5.2.2 Economy and Employment

As noted above, WBI Energy expects that the workforce will consist of local and regional workers. These workers will likely come from several of the counties crossed by the Project or the surrounding area, and their projected employment is anticipated to last for the period of construction (approximately 8 months). WBI Energy expects that the hiring of local or regional workers for construction will have minimal impact on the overall unemployment rates for the region given the short-term nature of the work, the relatively large Project area, and the already low unemployment rates in the counties affected by the Project.

WBI Energy estimates that the peak construction workforce will total 450 workers with an average of approximately 350 temporary construction workers. The workforce will consist of local residents, commuters, and workers who will temporarily relocate to the Project area. Construction of the pipeline will be accomplished using three construction spreads with an average temporary workforce of 250 workers over the 8-month (192 working days) construction period for the pipeline; approximately 24 of these workers may be hired locally. Construction of the compressor stations will require an average of about 75 people, consisting of a mix of local residents and workers who will temporarily relocate to the Project area. Construction of the Elkhorn Creek Compressor Station will require an average of approximately 30 construction workers over the 8-month period; about 10 of these construction workers will be hired locally. Construction at the Tioga Compressor Station will require an average of approximately 45 construction workers over the same 8-month period; about 11 of these construction workers will be hired locally.

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Construction of the remaining aboveground facilities will require an average of 20 construction workers over approximately a 20-day period, of which about 5 may be hired locally.

Approximately four additional permanent staff will be required for operation of the pipeline and aboveground facilities. The additional staff will likely be based out of the Tioga and Elkhorn Creek Compressor Stations.

The majority of land crossed by the Project is rural in nature and few business (other than farming operations) are in close proximity to the Project. It is not anticipated that the Project will have any direct impacts on non-agricultural businesses. Any business accessibility impacts will be temporary in nature. WBI Energy will work with business owners and farm operators that may be affected by Project construction to ensure that potential impacts are minimized.

No displacement or removal of residences or businesses is anticipated due to Project construction and operation. WBI Energy will coordinate any planned road closures with land and business owners. Should construction or operation of the Project result in any unplanned impacts on residences or businesses, WBI Energy will work with individual property or business owners to mitigate the concerns on a case-by-case basis.

5.2.6 Economy and Tax Revenue

Most of the construction payroll earnings for the Project are expected to be spent locally/regionally. In addition, it is expected that some portion of non-local payroll earnings will be spent locally for the purchase of items such as fuel, food, and entertainment during travel to the Project area. Construction personnel hired directly or through a third party will have a positive impact on local tax revenues through payroll spending on housing, food, utilities, entertainment, and luxury items. The Project construction payroll is estimated to total approximately \$114,487,800 over the duration of the Project, which may help stimulate regional employment as new workers are hired to meet construction demands. Due to the minimal number (4) of new permanent employees for operation of the Project facilities, there will be insignificant changes to the long-term contribution of payroll to the local economies.

WBI Energy estimates that construction materials will be purchased locally and other construction funds for housing, machinery repair, catering, fuel, and other items will be spent locally. WBI Energy estimates that such cost of construction materials and supplies will be about \$71,405,000²². Materials such as concrete, stone, erosion control materials, mulch, seed, and fencing are all items that can be purchased from local vendors. These purchases will result in short-term beneficial impacts on local businesses by generating additional revenues and contributing to the tax base. Based on current state sales tax rates, the state sales tax revenues for material and supplies are estimated to be about \$3,785,000.

Project construction will result in positive short-term benefits through increased state and local sales tax revenues associated with increased payroll spending by the construction workforce and the purchase of construction materials. Positive indirect impacts include increased sales for businesses that specifically service construction activities. WBI Energy will pay the required environmental and construction permit fees which will generate a small amount of revenue for the counties. Income and sales tax revenues

²² It has come to WBI Energy's attention that the dollar amounts initially provided with the February 14, 2020 filing for construction materials and supplies and state sales tax revenues were incorrect. WBI Energy has updated the amounts to reflect what it currently estimates the amounts to be.

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generated from Project construction will most likely benefit education and school programs, health care programs, and public transportation and infrastructure projects.

In addition, ad valorem, or property taxes, result in long-term benefits to local and regional economies. Ad valorem tax revenues will depend on the length or footprint of Project facilities in each county and will be paid over the life of the Project. Based on estimated property tax rates, WBI Energy estimates that total annual ad valorem tax revenue associated with the Project will be about \$672,008. Property tax revenues are typically used by local and state governments for infrastructure improvements such as roads, schools, and health facilities, and to meet other community needs.

5.2.7 Transportation

Construction of the Project will intermittently affect transportation and traffic in the Project area at varying levels due to construction across roads and highways, the commuting of the construction workforce to the Project area, and the movement of construction vehicles and delivery of equipment and materials to the construction work area.

As noted in appendix II of Resource Report 1, WBI Energy received a scoping comment about construction traffic and flaggers. The movement of construction equipment, materials, and construction personnel will cause a temporary increase in traffic volumes along area roadways. However, impacts from construction-related traffic will be short term at any location as construction personnel and equipment will be geographically dispersed during the construction period, and personnel will travel to and from the Project area primarily during early morning and late evening hours. Additionally, construction contractors will comply with local weight limitations and restrictions on area roadways and will remove any soil that falls onto roadway surfaces.

Construction across roads and highways will result in short-term, local impacts on public transportation while construction activities pass through the Project area. Most paved roads, highways, and railroads will be crossed by boring beneath the roadbed or railroad, which will reduce potential impacts on transportation during construction. Brief traffic delays may occur when equipment needed to complete a bore or directional drill is brought onto or off of the Project site; however, the Project will use flaggers and signage to safely slow or direct traffic as appropriate. Unpaved farm roads, two-tracks, trails, and driveways, as well as roads in areas with a high water table, will be crossed using the open-cut method and then restored to preconstruction condition. Although these crossings are not expected to affect transportation, the Project will implement measures (e.g., detours, plating over the open portion of the trench) to maintain passage for landowners and emergency vehicles, as appropriate.

Existing local county and township roads will be used to transport construction equipment to the Project area. Estimates for the number of vehicles that WBI Energy anticipates will be required during construction are provided in table 5.2.7-1. Vehicles will include stringing trucks, welding rigs, water trucks, fuel trucks, mechanic trucks, front end loaders, hydrostatic equipment trucks, backhoes, and construction personnel and environmental inspector vehicles. WBI Energy anticipates that some workers will carpool to the construction area, thus reducing passenger vehicle load on local roads. During construction, vehicles will be distributed across the Project area according to the specific phase of construction; in addition, vehicles involved in construction are anticipated to travel between the laydown yards and the construction workspace approximately one to two times per day. While the total duration of construction along the pipeline route is anticipated to last about 192 days over an 8-month period, construction in any distinct

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location is anticipated to last about 4 weeks and construction activities will be scheduled to take advantage of daylight hours. As such, construction crews will typically avoid peak commuting periods by traveling to the worksite early in the morning and from the worksite later in the evening. Certain construction-related activities such as hydrostatic testing, HDDs, and tie-ins, among others, may occur at unspecified times and outside the normal work day. WBI Energy will attempt to schedule these activities in such a way (e.g., outside of peak traffic hours) to minimize impacts on local commuter traffic. The Project may create a minor temporary increase in traffic on county and township roads during active construction, but traffic delays are not anticipated. Construction of the pipeline across public roads will be completed via HDD or guided bore; therefore, no impacts to local traffic are anticipated.

TABLE 5.2.7-1 North Bakken Expansion Project Estimated Daily Vehicle Traffic					
Project Facility	Construction and Delivery Vehicles	Construction Personnel Vehicles	Estimated Duration of Construction	Estimated Trips Per Day Per Vehicle	Estimated Total Trips Per Day
Pipelines	75	25	192 days over a 8-month period	2	200
Elkhorn Creek Compressor Station	15	5	192 days over a 8-month period	2	40
Tioga Compressor Station	22	9	192 day over a 8-month period	2	62
Delivery, Receipt, and Transfer Stations (typical)	5	2	20 days	2	14
Total	117	41	192 days	8	316

As part of the proposed HDD crossing of Lake Sakakawea, the pipe pullback will extend across 51st Street N.W. on the north side of the lake. WBI Energy has proposed a temporary aerial span of this road with the pipe during the pullback, which is anticipated to take between 24 and 36 hours to complete. If a road closure is necessary, WBI Energy will work with local law enforcement and county agencies to ensure that impacts on local traffic are minimized. Construction vehicles and equipment will comply with all federal, state, and county regulations as well as local load weight restrictions.

5.3 Environmental Justice

5.3.1 Demographic and Economic Data

Environmental Justice Areas or Communities are defined by the EPA as locations that have a “meaningfully greater” percentage of minorities than the general population (ten percent or greater), locations in which minorities comprise more than 50 percent of the affected area’s population, or locations in which the low-income population is equal to or greater than that of the reference population (EPA, 2016). The environmental justice communities potentially crossed by the Project’s pipeline facilities were identified using available 2017 American Community Survey census statistics regarding ethnicity and poverty levels. Poverty level information was unavailable by block group due to the lower population in the Project area; therefore, this information is presented by Census Tract. Table 5.3.1-1²³ provides demographic statistics for North Dakota, the four counties affected by the Project, and census block groups within one mile of the

²³ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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Project centerline and/or aboveground facilities. Table 5.1.2-3²⁴ above provides an overview of the general economic status of these areas.

None of the communities affected by the Project meet the definition of an environmental justice community using the EPA's meaningfully greater analysis method or low-income analysis. However, as indicated in table 5.3.1-1, the poverty levels for Burke County and Census Tract 9533, block groups 1 and 2 are both 7.3 percent. This is because the entire population of Burke County is represented by Census Tract 9533, block groups 1 and 2. To provide meaningful analysis, the state of North Dakota (11.0 percent) was used as a reference population for evaluation of low-income populations within Census Tract 9533. The poverty level in Census Tract 9533 is 7.3 percent, which is 3.7 percentage points lower than the poverty level for the state of North Dakota (11.0 percent). Therefore, Census Tract 9533 in Burke County does not meet the definition of an environmental justice community under EPA standards. The average poverty level across all counties affected by the Project is 9.8 percent, which is 1.2 percentage points lower than the state of North Dakota.

The Fort Berthold Reservation (which is within the study area for socioeconomics but not crossed by the Project) contains four census block groups that exceed the EPA thresholds:

- Census Tract 9403, Block Group 1, Mountrail County, with a minority population of 51 percent;
- Census Tract 9404, Block Group 1, Mountrail County, with a minority population of 62 percent;
- Census Tract 9404, Block Group 2, Mountrail County, with a minority population of 81 percent; and
- Census Tract 9401, Block Group 1, McKenzie County, with a minority population of 95 percent.

The nearest Project facility, the Tioga-Elkhorn Creek pipeline, will be located about 18 miles west of the Fort Berthold Reservation. These census block groups have an average demographic index of 57 percent, and an average low-income population of 40 percent.

WBI Energy has engaged federally recognized Indian tribes in consultation to minimize Project impacts on these communities and their cultural resources (for more information see section 4.6.3 of Resource Report 4). Because the proposed Project does not cross any of the communities defined above, environmental justice impacts are not anticipated as a result of the Project.

²⁴ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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6.0 UPDATES TO RESOURCE REPORT 6 – GEOLOGICAL RESOURCES

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

6.1 Geological Setting

The proposed Project is located within the Williston Basin of northwestern North Dakota. The Williston Basin is a large intracratonic structural trough that covers approximately 300,000 square miles across parts of North and South Dakota, Montana, and the Canadian provinces of Manitoba and Saskatchewan (North Dakota Geological Survey [NDGS], 2019a). In the Project area, Precambrian basement rock is overlain by sedimentary rocks of Paleozoic, Mesozoic, and Cenozoic age that range in thickness up to about 15,000 feet and generally dip gently to the south, except near the Nesson Anticline in eastern Williams County (Freers, 1970). Prior to the uplift of the Rocky Mountains in the late Cretaceous period, the Paleozoic and early Mesozoic marine sedimentary rocks were deposited in shallow, retreating and advancing epicontinental seas that covered the Project area. The mountain-building event in the late Cretaceous prompted erosion and deposition of non-marine sediments, which formed Tertiary-age lakes and swamps in the basin that would become coal deposits. During the Quaternary, advancing glaciers from the north deposited mixed glacial till and debris (Keefer, 1974).

The bedrock underlying surficial deposits in the Project area consists of the Tertiary Sentinel Butte and Bullion Creek formations, which comprise the Fort Union Group and were deposited by rivers carrying sediment eroded from the Rocky Mountains (Bluemle and Biek, 2007). These formations consist primarily of sandstone, shale, and siltstone, with many lignite beds formed from prehistoric swamps. The Sentinel Butte Formation underlies the Line Section 25 Loop, the Tioga Compressor Lateral, the Elkhorn Creek-Northern Border pipeline, the Tioga-Elkhorn Creek pipeline from about mileposts (MP) 0.0 to 3.6, MPs 27.0 to 27.3, MPs 41.1 to 62.8, and the Line Section 30 Loop between about MPs 5.8 and 9.6 (Bluemle, 1983). The Bullion Creek Formation underlies the Tioga-Elkhorn Creek pipeline from about MPs 3.6 to 27.0 and MPs 27.3 to 41.1 in Williams and McKenzie Counties, and the Line Section 30 Loop between about MPs 0.0 and 5.8 in Williams County.

The surficial geology underlying the Project area north of Lake Sakakawea in Burke, Mountrail, and Williams Counties consists primarily of Pleistocene glacial sediments of Late Wisconsin age (NDGS, 2015). The Pleistocene surface deposits, referred to as the Coleharbor Group, that underlie the Line Section 25 Loop, the Tioga Compressor Lateral, Line Section 30 Loop, the updates to Line Section 25, and sections of the Tioga-Elkhorn Creek pipeline predominantly consist of till and glaciofluvial deposits, with some lake sediments, colluvium, and recent alluvium and landslide deposits (NDGS, 2015).

In addition to glacial deposits, portions of the Project area are underlain by fluvial sediments including sand, silt, and clay of late Quaternary age referred to as the Oahe Formation (Freers, 1973). The Oahe Formation consists largely of organic clay and silt deposited in sloughs and in shallow channels eroded during deglaciation. This sediment, which in places overlies the sand and gravel of the fluvial-glacial Coleharbor Group, was deposited by Holocene streams, intermittent runoff from valley sides, and wind. The Oahe Formation deposits are generally thin throughout the Project area (up to 1 meter thick) and confined to valley and slough bottoms. The Oahe Formation found in sloughs throughout the Project area consists of fine-grained, organic-rich sediment deposited by runoff from surrounding higher ground, wind,

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and the decomposition of vegetation that grows in the wet environment. Along the Missouri River, pebble-size pieces of Knife River Flint are common, as are fossils such as bison bones (Clayton et al., 1976).

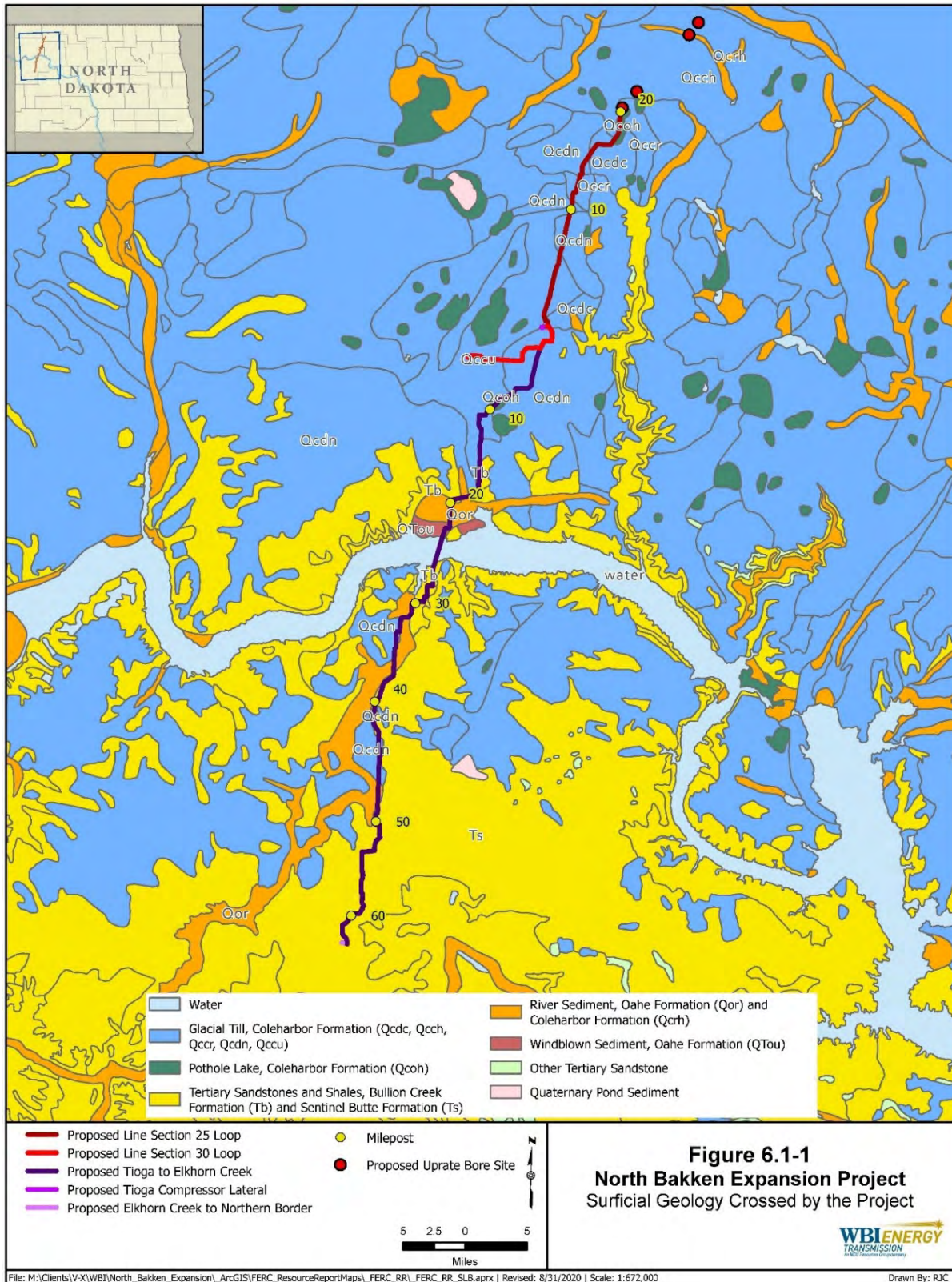
South of Lake Sakakawea in McKenzie County, the Coleharbor Group and Oahe Formation deposits become less widespread and the sandstones and shales of the Sentinel Butte and Bullion Creek formations become the predominant surface deposit (NDGS, 2015). Based on well logs in McKenzie County, the Sentinel Butte and Bullion Creek formations are about 1,220 feet thick. The Bullion Creek Formation consists of interbedded sand, silt, clay, carbonaceous shale, and lignite (silt and clay are dominant lithologies), and the Sentinel Butte Formation consists of interbedded sand, silt, mudstone, lignite, and carbonaceous shale, with ironstone nodules and petrified wood (Carlson, 1985). Figure 6.1-1 depicts the surficial geologic deposits that underlie the Project area, and table 6.1-1 provides a summary of the surficial geology underlying the Project area by milepost.

To confirm the surficial and bedrock geology and facilitate design of the proposed approximately 15,400-foot-long horizontal directional drill (HDD) crossing of Lake Sakakawea, geotechnical surveys were conducted, which involved installing three land borings (LB-1, LB-2, and LB-3) to depths of 372, 400, and 403 feet below the ground surface in April and May 2019, and six over-water borings (WB-4 through WB-9) to depths ranging from 300 to 315 feet below the Lake Sakakawea mudline in May 2020.

The land-based and over-water borings encountered sedimentary sequences of interlayered sand, silt, clay, coal seams, and shale to the final termination depths. The land-based borings encountered primarily well-graded to poorly graded sand to a depth of about 25 feet below ground surface in LB-1 and a depth of about 120 feet below ground surface in LB-2 and LB-3. Underlying the sand, the investigation noted the presence of silt, clay, weathered shale, silty sand, and interbedded lignite seams in each boring. The shallow well-graded sands encountered in LB-3 correlate with the documented alluvial deposits present on the north side of Lake Sakakawea that are up to 100 feet thick (Freers, 1970). The over-water borings encountered shallow alluvial deposits such as silts and poorly graded sands and gravels to a depth of about 45 feet below the mudline in WB-4 and WB-9, and a depth of 220 feet below the mudline in WB-7. The geotechnical investigation determined that poorly lithified shale and sand associated with the Sentinel Butte and Bullion Creek formations underlie these alluvial deposits. The sedimentary strata within the nine borings were relatively consistent, and two relatively continuous coal seams were identified near the bottom of the proposed HDD bore path. Based on coal layers observed in the boring logs, bedrock outcrops of the Sentinel Butte Formation on the south shoreline and Sentinel Butte and Bullion Creek formations on the north shoreline of Lake Sakakawea, and high (greater than 50) standard penetration test values, the study determined that bedrock strata associated with the Sentinel Butte Formation would be the primary material encountered during the HDD.

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TABLE 6.1-1			
North Bakken Expansion Project Surficial Geology Crossed by the Project			
Facility	Start Milepost	End Milepost	Surficial Geology
Tioga-Elkhorn Creek	0.0	15.4	Coleharbor Group
	15.4	17.3	Bullion Creek
	17.3	18.3	Coleharbor Group
	18.3	18.9	Oahe Formation
	18.9	19.6	Bullion Creek
	19.6	23.2	Oahe Formation
	23.2	25.5	Water
	25.5	30.1	Bullion Creek
	30.1	31.9	Oahe Formation
	31.9	32.7	Coleharbor Group
	32.7	33.2	Oahe Formation
	33.2	34.7	Coleharbor Group
	34.7	34.8	Oahe Formation
	34.8	35.1	Coleharbor Group
	35.1	36.8	Oahe Formation
	36.8	43.0	Sentinel Butte
	Elkhorn Creek-Northern Border	43.0	44.7
44.7		45.2	Sentinel Butte
45.2		46.8	Coleharbor Group
46.8		48.6	Oahe Formation
48.6		62.8	Sentinel Butte
0.0		0.3	Sentinel Butte
0.0		20.3	Coleharbor Group
0.0		9.5	Coleharbor Group
0.0		0.5	Coleharbor Group
N/A		N/A	Coleharbor Group

Source: NDGS, 2015

The geotechnical investigations conducted for the HDD Design Report prepared by CCI & Associates provided data for a model of the HDD crossing that utilized a “firm CL-CI clay” parameter at the surface, a “compact sand” parameter to represent variable thickness of the overlying alluvial deposits and a “shale bedrock” parameter to represent the Sentinel Butte bedrock. The model assumed that the intersect drill method will be used due to the length of the crossing and used a design depth of about 250 feet below the mudline to provide sufficient overburden to minimize the risk of hydraulic fracture. Based on geotechnical information, stress analysis, and model results, the feasibility study determined that the proposed HDD will be geometrically feasible. In addition, the HDD Design Report provides a detailed summary of risks associated with the HDD crossing, including risk of hydraulic fracture and inadvertent returns, and

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recommendations for mitigation measures to be implemented to reduce the risks. The HDD Design Report prepared by CCI & Associates is included as attachment B to the *Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan* (HDD Plan) included in appendix 1F of Resource Report 1.

WBI Energy did not conduct geotechnical investigations for guided bore installations associated with the Project and does not have future plans to complete geotechnical investigations. The guided bore method is generally being employed to provide additional depth at the crossings, maintain function of the ditches and roads during construction, and minimize disturbance to these features. The majority of the guided bores associated with Project activities are short and shallow guided bores under roads and railroads; however, a few select environmental features (e.g., waterbodies, wetlands) will be crossed via the guided bore method. Generally, these crossings could be installed using the traditional open-cut method; however, WBI Energy has elected to install the crossings using a guided bore to avoid direct impacts on these features. More information regarding the guided bore method is provided in sections 1.3.2.1 and 1.3.2.3 of Resource Report 1.

According to a description of surficial geologic deposits underlying the Project (Clayton et al., 1980), it is anticipated that the guided bores associated with the Line Section 30 Loop, Line Section 25 Loop, uprating the existing Line Section 25, and northern sections of the Tioga-Elkhorn Creek pipeline will intersect unsorted sand, gravel, silt, and clay glacial deposits associated with the Coleharbor Group. Glacial deposits generally comprise a wide variation of sediment grain sizes, and may contain randomly distributed cobbles or boulders. South of where Coleharbor Group glacial sediments are prevalent, the guided bores for the Tioga-Elkhorn Creek pipeline will cross river sediments of the overlying Holocene-age Oahe Formation. The fluvial (i.e., river-deposited) sediments consist of clay, silt, and sand at thicknesses up to 10 meters (approximately 30 feet). The guided bores located immediately north of Lake Sakakawea would cross the thin (up to 10 feet thick) windblown silt and sand deposits of the Oahe Formation. The guided bores that cross the Oahe Formation are anticipated to reach a maximum depth of 20 feet below ground surface; as such, depending on the localized thickness of the deposits, the bore may be either entirely within the windblown deposits or intersect the underlying glacial sediments of the Coleharbor Group.

The guided bores located primarily south of Lake Sakakawea will cross clay, sand, and silt associated with the Tertiary-age Bullion Creek Formation or Sentinel Butte Formation. The Bullion Creek Formation consists of up to 200 meters (600 feet) of yellowish brown silt, sand, and clay, and poorly consolidated shales and sandstones with interbedded lignite. The uppermost strata of the Bullion Creek Formation consist primarily of clay and silt, while the lower (older) strata have a higher percentage of sand (Clayton et al., 1977). The Sentinel Butte Formation overlies the Bullion Creek Formation and is distinguished by the darker gray color; however, in other respects the sediments are very similar and were deposited in similar low-energy fluvial, alluvial, and lacustrine settings (i.e., river, lakes, and swamp areas; Forsman, 1989).

Based on review of publicly available resources and the geologic depositional environments of the Coleharbor Group, Oahe Formation, and Sentinel Butte and Bullion Creek formations, although it is possible that boulders may be encountered in glacial deposits, it is not anticipated that hard, consolidated bedrock or large cobbles or boulders would prevent successful completion of the guided bores. If such an obstacle is encountered during construction of the Project, WBI Energy will implement the procedures described in the HDD Plan (appendix 1F-8 of Resource Report 1), as needed, to successfully complete the guided bore. Refer to table 6.1-2 for a summary of the proposed guided bore locations, lengths, and maximum depths.

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TABLE 6.1-2						
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Milepost	Feature Crossed	Length (feet)	Approximate Max Depth (feet)	Geologic Formation	Map Unit	Approximate Thickness (feet)
Tioga-Elkhorn Creek						
0.4	68TH ST NW	350	7	Coleharbor / Glacial	Qcdn	100
0.9	GREAT NORTHERN RAILROAD	500	12	Coleharbor / Glacial	Qcdn	100
1.9	103RD AVE NW	251	7	Coleharbor / Glacial	Qcdn	100
2.1	67TH ST NW	250	7	Coleharbor / Glacial	Qcdn	100
3.2	66TH ST NW	250	7	Coleharbor / Glacial	Qcdn	100
4.3	65TH ST NW	250	7	Coleharbor / Glacial	Qcdn	100
5.4	US HWY 2	600	15	Coleharbor / Glacial	Qcdn	100
6.2	104TH AVE NW	250	7	Coleharbor / Glacial	Qcdn	100
7.2	105TH AVE NW	350	7	Coleharbor / Glacial	Qcdn	100
7.5	63RD ST NW	250	7	Coleharbor / Glacial	Qcdn	100
8.5	106TH AVE NW	250	7	Coleharbor / Glacial	Qccu	100
9.2	62ND ST NW	350	7	Coleharbor / Glacial	Qcoh	100
12.1	60TH ST NW	350	7	Coleharbor / Glacial	Qccu	100
14.2	58TH ST NW	250	7	Coleharbor / Glacial	Qcdn	100
16.2	56TH ST NW	250	7	Bullion Creek / River, Lake and Swamp	Tb	600
18.2	Beaver Creek s-wm- eb-002	630	13	Coleharbor / Glacial	Qcdn	100
18.5	109th AVE NW	250	7	Oahe / River Sediment	Qor	30
19.8	110TH AVE NW	250	7	Oahe / River Sediment	Qor	30
19.8	STATE HWY 1806	278	7	Oahe / River Sediment	Qor	30
20.8	53RD ST NW	250	7	Oahe / River Sediment	Qor	30
22.4	52ND ST NW	250	7	Oahe / Windblown Sediment	Qou	10
23.0	DRIVEWAY	250	7	Oahe / Windblown Sediment	Qou	10
26.3	48TH ST NW	1433	19	Bullion Creek / River, Lake and Swamp	Tb	600
27.5	Waterbody s-mk-ea-00	900	20	Bullion Creek / River, Lake and Swamp	Tb	600
28.6	Highway 1806	506	10	Bullion Creek / River, Lake and Swamp	Tb	600
29.0	Highway 1806 and waterbody s-mk-wa- 001	1,164	20	Bullion Creek / River, Lake and Swamp	Tb	600
29.9	COUNTY RD 43 / 115 th Ave NW	250	10	Bullion Creek / River, Lake and Swamp	Tb	600
30.2	Tobacco Garden Creek s-mk-eb-002	250	20	Oahe / River Sediment	Qor	30
30.8	45TH STREET NW	250	7	Oahe / River Sediment	Qor	30
34.7	42ND STREET NW	250	7	Oahe / River Sediment	Qor	30
36.4	PORCUPINE COULEE s-mk-ea-003	250	20	Oahe / River Sediment	Qor	30

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Milepost	Feature Crossed	Length (feet)	Approximate Max Depth (feet)	Geologic Formation	Map Unit	Approximate Thickness (feet)
37.0	COUNTY HWY 10	350	10	Sentinel Butte / River, Lake and Swamp	Ts	600
38.5	WETLAND w-mk-ea- 003e	1200	20	Sentinel Butte / River, Lake and Swamp	Ts	600
38.9	121ST AVE NW	214	6	Sentinel Butte / River, Lake and Swamp	Ts	600
39.5	38TH ST NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
41.8	ACCESS ROAD	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
42.9	35TH ST NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
43.9	COUNTY HWY 12 / 34 th ST NW	350	10	Coleharbor / Glacial	Qcdn	25 2
44.0	121ST AVE NW	250	7	Coleharbor / Glacial	Qcdn	25 2
44.9	Timber Prong Creek and 33 rd St NW	977	20	Sentinel Butte / River, Lake and Swamp	Ts	600
47.0	31ST ST NW	350	7	Oahe / River Sediment	Qor	30
48.0	30TH ST NW	250	7	Oahe / River Sediment	Qor	30
49.0	29TH ST NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
49.4	121ST AVE NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
50.1	ACCESS ROAD	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
51.3	STATE HWY 23	508	20	Sentinel Butte / River, Lake and Swamp	Ts	600
51.5	Northfork Creek s-mk- eb-005	636	12	Sentinel Butte / River, Lake and Swamp	Ts	600
52.4	Cherry Creek s-lbt- 001a	723	12	Sentinel Butte / River, Lake and Swamp	Ts	600
55.2	COUNTY HWY 37 / 23 rd St NW	250	10	Sentinel Butte / River, Lake and Swamp	Ts	600
57.2	122TH AVE NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
57.3	122TH AVE NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
58.2	Steep terrain, NHD waterbody, tree stands	1,336	20	Sentinel Butte / River, Lake and Swamp	Ts	600
58.6	122ND AVE NW	250	7	Sentinel Butte / River, Lake and Swamp	Ts	600
60.3	COUNTY HWY 37 / 21 st St NW	250	10	Sentinel Butte / River, Lake and Swamp	Ts	600
Line Section 25 Loop						
0.6	103rd Ave NW	195	11	Coleharbor / Glacial	Qcdn	100
0.7	w-wm-eb-002e	657	20.	Coleharbor / Glacial	Qccu	100
1.0	69th St NW	316	13	Coleharbor / Glacial	Qccu	100

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TABLE 6.1-2

**North Bakken Expansion Project
Summary of Proposed Guided Bore Locations and Surficial Geology**

Milepost	Feature Crossed	Length (feet)	Approximate Max Depth (feet)	Geologic Formation	Map Unit	Approximate Thickness (feet)
2.0	70th St NW & 103rd Ave NW	308	19	Coleharbor / Glacial	Qccu	100
3.1	71st St NW	308	11	Coleharbor / Glacial	Qccu	100
4.1	72nd St NW	223	11	Coleharbor / Glacial	Qccu	100
5.1	73rd St NW	129	9	Coleharbor / Glacial	Qccu	100
6.2	74th St NW	200	12	Coleharbor / Glacial	Qccu	100
6.6	102nd Ave NW	449	16	Coleharbor / Glacial	Qcdn	100
7.2	75th St NW	271	12	Coleharbor / Glacial	Qcdn	100
8.2	76th St NW	270	12	Coleharbor / Glacial	Qcdn	100
9.3	77th St NW	272	20	Coleharbor / Glacial	Qcdn	100
10.3	78th St NW	264	19	Coleharbor / Glacial	Qccu	100
11.3	79th St NW	277	14	Coleharbor / Glacial	Qccr	100
11.4	101st Ave NW	260	12	Coleharbor / Glacial	Qccr	100
12.5	80th St NW	312	18	Coleharbor / Glacial	Qccr	100
13.4	White Earth Creek	1081	26	Coleharbor / Glacial	Qcdn	100
13.6	81st St NW	204	13	Coleharbor / Glacial	Qcdn	100
14.8	100th Ave NW	322	13	Coleharbor / Glacial	Qcdn	100
16.2	99th Ave NW & w-bk-ea-001e	627	12	Coleharbor / Glacial	Qcdc	100
17.1	83rd St NW	261	12	Coleharbor / Glacial	Qcdc	100
17.5	98th Ave NW	282	10	Coleharbor / Glacial	Qcoh	200
19.3	85th St NW	156	11	Coleharbor / Glacial	Qcoh	200
Line Section 30 Loop						
3.2	106th Ave NW	200	7	Coleharbor / Glacial	Qcdn	100
4.2	105th Ave NW	250	7	Coleharbor / Glacial	Qcdn	100
5.2	66th St NW	250	7	Coleharbor / Glacial	Qcdn	100
6.3	State HWY 40	350	20	Coleharbor / Glacial	Qcdn	100
7.5	67th St NW	250	7	Coleharbor / Glacial	Qcdn	100
7.7	103rd Ave NW	250	7	Coleharbor / Glacial	Qcdn	100
8.6	GREAT NORTHERN RAILROAD	500	12	Coleharbor / Glacial	Qcdn	100
9.2	68th St NW	350	7	Coleharbor / Glacial	Qcdn	100
Uprate Line Section 25						
18.9	86th Ave NW & Wetland	745	23	Coleharbor / Glacial	Qccr	100
17.2	HWY 40	381	18	Coleharbor / Glacial	Qcch	100
10.8	92nd St NW	351	22	Coleharbor / River Sediment	Qcrh	100
9.6	93rd St NW & 89th Ave NW	313	11	Coleharbor / Glacial	Qcch	100

Sources: Clayton et al. (1980), North Dakota Geological Survey (2015), and Carlson (1985). Carlson (1985) indicates that the Coleharbor Group in McKenzie County may be closer to 25 feet thick.

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WBI Energy will employ a qualified bore contractor to complete guided bore operations. The bore contractor will minimize risks by being prepared with the proper equipment, tools, and supplies prior to drilling and closely adhering to the measures described in WBI Energy's HDD Plan to monitor drill activities and immediately respond to any abnormal conditions or inadvertent returns.

6.2 Physiographic Setting and Topography

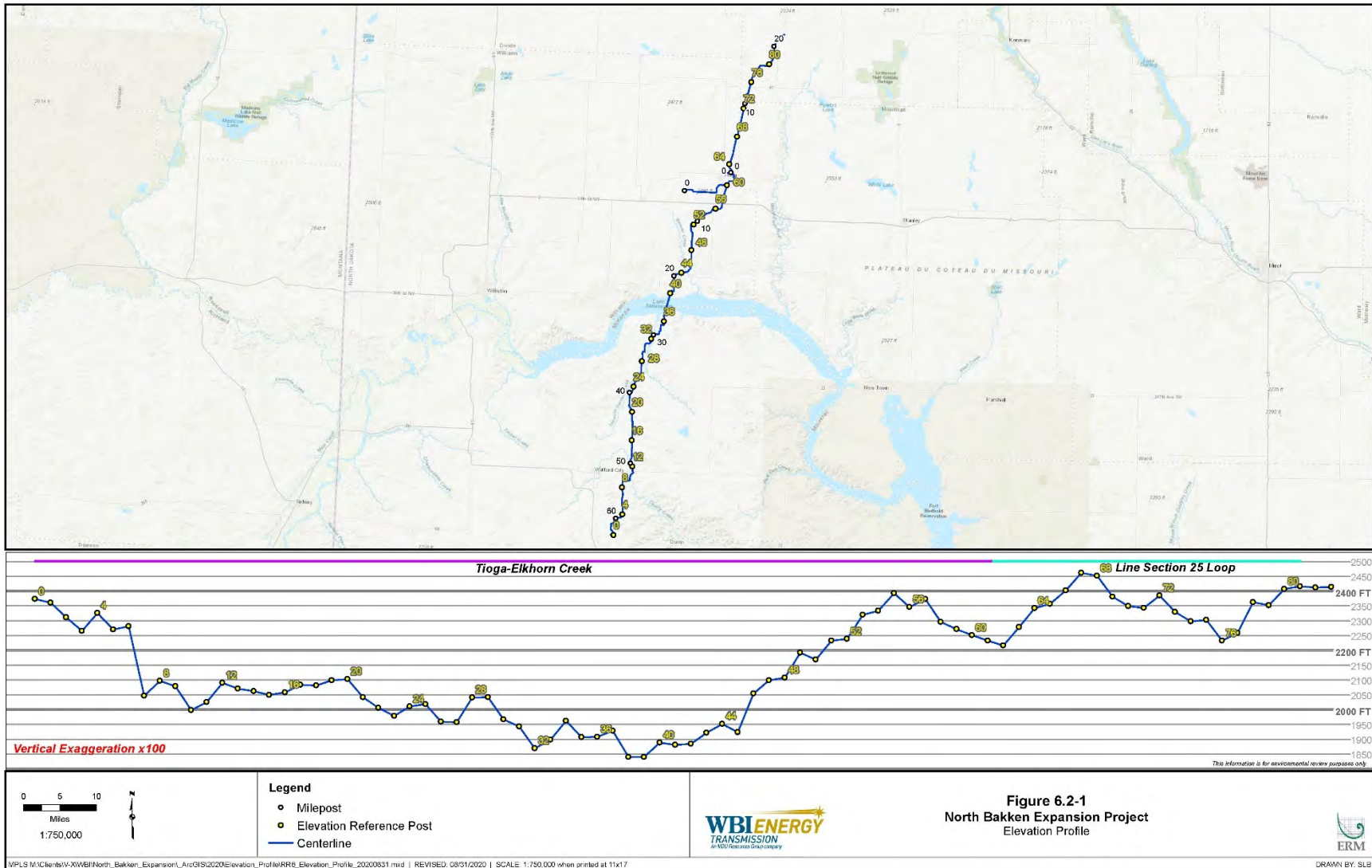
Physiographic provinces are distinguished by geologic structures, rock units, soil types, and vegetation that reflect a similar climatic and geological history. The elevations and characteristics of landforms within each physiographic province differ from those in adjacent regions. The proposed Project will be located within the Great Plains physiographic province, which is separated from the Central Lowlands province to the east by a linear topographic boundary referred to as the Missouri Escarpment (Keefer, 1974). Elevations in the Project area range from approximately 1,850 feet above mean sea level at the Lake Sakakawea crossing between about MPs 23.2 and MP 25.5 of the Tioga-Elkhorn Creek pipeline to approximately 2,450 feet above mean sea level near MP 6.0 of the Line Section 25 Loop. Figure 6.2-1 provides an elevation profile of the topography of the Project area from the southern boundary of the Tioga-Elkhorn Creek pipeline to the northern end of the Line Section 25 Loop.

The Great Plains province in western North Dakota is further sub-divided into the Missouri Coteau, Coteau Slope, Missouri Plateau, and Little Missouri Badlands. The northern-most end of the Line Section 25 Loop and excavations to uprate the existing line in Burke County will be located within the Missouri Coteau, which is characterized by hummocky, or undulating and irregular, terrain that is dominated by numerous pothole lakes and ponds, which cause drainage to be unintegrated and are indicative of glacial activity (Keefer, 1974; Bluemle and Biek, 2007). The Line Section 25 Loop will cross into the Coteau Slope near MP 17 in Burke County and extend south through Mountrail County, where the topography becomes rolling to hilly to the south. Streams form integrated drainage that generally flows to the south toward the Missouri River. In Williams County, local relief where the proposed Project will cross the Coteau Slope ranges from low (0 to 15 feet), with 0 to 2 degree slopes in the intraupland flats located between MPs 19.3 and 23.2 of the Tioga-Elkhorn Creek pipeline, to medium (25 to 50 feet) or high (greater than 50 feet), with slopes ranging from 3 to 10 degrees in undulating knob and kettle areas north of MP 19.3 of the Tioga-Elkhorn Creek pipeline (Freers, 1970).

In McKenzie County, the Missouri Plateau sub-province consists primarily of gentle slopes and low relief, except where buttes and ridges associated with Tertiary sandstones and shales of the Fort Union Group form topographic highs (Carlson, 1985; Bluemle and Biek, 2007).

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6.3 Mineral Resources

Due to the geologic history and structural features in the Williston Basin, the geologic units overlying the Project area host significant oil and gas resources. In addition, the area hosts exploitable deposits of coal/lignite and salt. Finally, glacial sediments cover three-fourths of North Dakota, which contain sand and gravel that is mined for industrial and commercial purposes (Murphy, 2019c; U.S. Geological Survey [USGS], 2019a). The entire Project is within NDDMR-mapped oil fields. Table 6.3-1 provides the approximate mileposts where Project pipeline facilities would cross oil and gas fields.

TABLE 6.3-1			
Oil and Gas Fields Crossed by the Project			
Facility	Start Milepost	End Milepost	Oil and Gas Field
Tioga-Elkhorn Creek	0.0	3.2	Tioga
	3.2	16.2	Beaver Lodge
	16.2	21.8	West Capa
	21.8	26.3	Grinnell
	26.3	33.4	Sand Creek
	33.4	41.8	Banks
	41.8	43.9	Garden
	43.9	55.5	Siverston
	55.5	62.8	Pembroke
Elkhorn Creek-Northern Border	0.0	0.3	Pembroke
Line Section 25 Loop	0.0	11.4	Tioga
	11.4	20.3	North Tioga
Line Section 30 Loop	0.0	5.2	West Bank
	5.2	9.6	Tioga
Tioga Compressor Lateral	0.0	0.5	Tioga
Uprate Line Section 25	N/A	N/A	North Tioga, Foothills, and Black Slough

Source: NDDMR, 2019

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Significant natural gas and oil production is occurring within the Project area. The proposed Project will cross several oil and gas fields, including the North Tioga, Tioga, Foothills, West Bank, Beaver Lodge, West Capa, Sand Creek, Grinnell, Banks, Garden, Siverston, and Pembroke fields. As described in section 1.3.1 of Resource Report 1, WBI Energy’s contractor will coordinate with the North Dakota One-Call system to identify existing underground utilities prior to construction. Additionally, prior to construction WBI Energy or its representative will coordinate with known oil and gas producers to identify potentially unmarked and undocumented lines in older production areas to avoid any Project-related disruption of service. Construction across oil and gas fields and gathering pipelines will use the same general pipeline construction techniques described in section 1.3.1 of Resource Report 1. Crossings of gathering pipelines will be completed as shown in the typical construction right-of-way cross-section diagrams for foreign pipeline crossings (see appendix 1C of Resource Report 1).

Based on a query of the North Dakota Department of Mineral Resources (NDDMR) database, 306 permitted oil and gas wells are located within 0.25 mile of the Project workspaces. Appendix 6A provides a detailed list of well information and an overview map of the oil and gas well locations. Of the 306 permitted wells, approximately 144 wells are listed as plugged and abandoned, abandoned, inactive, temporarily abandoned, or the permit has been cancelled. The status of an additional 49 wells is listed as confidential, dry, or permitted location to drill. The remaining 113 wells are currently classified as active, drilling, or drilled to total depth but awaiting completion. The closest active oil and gas well is approximately 226 feet from the Line Section 30 Loop pipeline right-of-way at MP 0.1 (NDDMR, 2019). In addition, approximately 38 oil and gas wells are located within 500 feet of proposed guided bore sites associated with roadway crossings. Of these 38 wells, the closest is an oil and gas well (plugged and abandoned) approximately 67 feet from the guided bore across 74th Street NW near MP 6.2 of the Line Section 25 Loop pipeline. Conditions are typically favorable for guided bore drilling operations in North Dakota because the soil is not very rocky and the rock does not fracture easily. On past construction projects in McKenzie and Williams Counties in North Dakota, WBI Energy has used the guided bore method to cross over 30 county and state roads and highways without any cross-contamination with existing oil and gas wells. Because the depth of most guided bore road crossings is less than or equal to 20 feet, any drilling fluid will most likely surface in a road ditch instead of traveling downward and deep enough to cross-contaminate existing oil or gas wells.

Western North Dakota contains an estimated 351 billion tons of lignite (a soft brown coal), the single largest deposit of lignite known in the world. All of the economic or mineable coal in North Dakota, which is Paleocene in age, is found within the lower Fort Union Group in western and central North Dakota (Murphy, 2019a). Although lignite beds underlie the entire Project area, there currently are no active lignite coal mines in the vicinity of the proposed pipeline routes. Based on publicly available information from the North Dakota Public Services Commission (NDPSC), no formal notices for proposed coal mines have been filed in counties that the Project will cross. The most recent coal permit issued by the NDPSC was in 2014 for a mine located in Mercer County (NDPSC, 2014; 2020). “Scoria,” or clinker, is a term used for volcanic-like rocks that are formed when clay, silt, and sandstone deposits are baked by burning lignite beds (Murphy, 2019c; Freers, 1970). Scoria can be found near the Missouri River in strata of the Sentinel Butte and Bullion Creek formations where the interbedded lignite seams baked the overlying and underlying rocks (Freers, 1970).

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Three types of salt deposits (i.e., halite, potash, and Glauber salt) are found within the Williston Basin. Halite (sodium chloride or table salt) and potash (potassium chloride) occur in thick deposits in the deeply buried Paleozoic sedimentary deposits in the western part of the basin, and underlie the entire Project area (LaFever and LaFever, 2005). Glauber salt (sodium sulfate) occurs at or within 70 feet of the surface throughout North Dakota. Additionally, Glauber deposits are known to occur in Holocene lacustrine sediments in the region (Murphy, 2019b). Many of the lakes in northwestern North Dakota contain water with a high salt content throughout much of the year. There currently are no commercial halite or potash mines near the Project area, and the Project does not cross any significant natural pothole lakes. Any impacts on smaller, seasonally flooded wetlands from which salts might be harvested will be temporary and localized. As a result, the Project is unlikely to have any substantial impact on mining of salt deposits.

Sand and gravel is the third largest mineral industry in the state after oil and gas and lignite. According to the 2014 Minerals Yearbook for North Dakota (USGS, 2019a), mining of construction sand and gravel decreased while crushed stone volumes increased from 2013 to 2014. The USGS Mineral Resources Data System was queried to determine the number of nonfuel mining sites in the vicinity of the Project. According to the database, two mineral resource sites are present within 3.0 miles of the proposed Project (USGS, 2019b). The Arnstad Pit and Plant site, an active producer of sand and gravel, is about 2.2 miles east of MP 1.6 of the Line Section 25 Loop. The second site is a former gravel pit about 0.4 mile north of the Tioga-Elkhorn Creek pipeline near MP 29.7.

Based on review of available aerial imagery, USGS topographic maps, and mines mapped by the North Dakota Department of Transportation and NDPSC, 26 gravel or scoria pits and 4 abandoned mines were identified within 0.5 mile of the proposed Project (see table 6.3-2) (ESRI, 2019; North Dakota Department of Transportation, 2019; NDPSC, 2019). According to the Skogheim Coal Mine abandoned mine site summary, the mine reportedly operated between 1938 and 1960. The abandoned mine site summary indicates the Skogheim Coal Mine is located within the NW $\frac{1}{4}$ of Township 152 North, Range 98 West, Section 24; however, the exact location of the Skogheim Coal Mine site is unknown (NDPSC, 2019). Based on review of available historic aerial imagery, a pond feature was identified about 0.1 mile east of the Project that may have been associated with the Skogheim Coal Mine. No additional documentation was available regarding the locations of the John Gustafson and Wold surface mines in McKenzie County or the Quality Coal Company underground mine in Williams County. A retired scoria pit is located at the proposed location of the Elkhorn Creek Compressor Station. WBI Energy is working with the landowner of the proposed compressor station location who has indicated that they do not have future plans of continuing to produce scoria in this location.

Due to the distance from the Project and the inactive nature of many of the mining sites, it is not anticipated that the Project will affect existing nonfuel mineral resources.

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TABLE 6.3-2			
North Bakken Expansion Project Non-Fuel Mineral Resources Within 0.5 Mile of the Project Area ^a			
Facility/Milepost ^b	Distance (miles)/ Direction from Project	Mine Type	Mine Status ^c
PIPELINE FACILITIES			
Tioga-Elkhorn Creek			
19.1	<0.1/South	Quality Coal Company Mine	Abandoned Subsurface
28.7	0.3/West	Gravel Pit	Inactive
31.1	0.3/East	Gravel Pit	Inactive
35.1	0.4/West	Mine Shaft or Drift/Scoria Pit	Inactive
35.2	0.5/West	Wold Coal Mine	Abandoned Surface
37.7	0.1/Southeast	Scoria Pit	Inactive
38.5	<0.1/East	Scoria Pit	Inactive
38.5	0.1/Northwest	Scoria Pit	Inactive
38.6	<0.1/East	Mine Shaft or Drift/Scoria Pit	Inactive
38.6	0.1/West ^d	Skogheim Coal Mine	Abandoned Surface
38.6	0.1/Northwest	Scoria Pit	Inactive
39.5	<0.1/East	Gravel Pit	Inactive
39.6	0.4/Southeast	Gravel Pit	Inactive
39.7	<0.1/North	Gravel Pit	Inactive
39.7	0.2/South	John Gustafson Mine	Abandoned Surface
40.1	0.2/East	Scoria Pit	Inactive
41.2	0.3/East	Gravel Pit	Active
41.6	0.2/East	Scoria Pit	Inactive
53.9	0.3/North	Gravel Pit	Inactive
53.9	0.4/North	Gravel Pit	Inactive
53.9	0.5/North	Gravel Pit	Inactive
56.2	0.5/West	Gravel Pit	Inactive
59.2	0.2/Southeast	Gravel Pit	Active
Line Section 25 Loop			
0.8	0.4/West	Gravel Pit	Inactive
7.5	0.1/West	Gravel Pit	Inactive
12.9	0.5/East	Gravel Pit	Inactive
13.6	0.3/East	Gravel Pit	Inactive
13.9	0.2/East	Gravel Pit	Inactive
Uprate Line Section 25			
NA	0.4/East	Gravel Pit	Active
ABOVEGROUND FACILITIES			
Elkhorn Creek Compressor Station			
NA	0.0	Scoria Pit	Inactive

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TABLE 6.3-2			
North Bakken Expansion Project Non-Fuel Mineral Resources Within 0.5 Mile of the Project Area ^a			
Facility/Milepost ^b	Distance (miles)/ Direction from Project	Mine Type	Mine Status ^c
^a Sourced from USGS, 2019b; ESRI, 2019; North Dakota Department of Transportation, 2019; NDPSC, 2019 ^b Mileposts are inserted as approximate reference points. ^c Mine status was determined based on observations of the mine sites using available aerial photography. ^d The NDPSC maps the Skogheim Coal Mine feature about 0.1 mile west of the Project; however, a pond feature was identified in available imagery about 0.1 mile east of the pipeline route and may have been associated with the mine.			

6.4 Geologic Hazards

6.4.1 Seismic-Related Hazards

Seismicity refers to the frequency, intensity, and distribution of earthquakes within a given area. Earthquakes generally occur when the two sides of a fault suddenly slip past each other. The movement creates ground motion, which can damage property and structures if the motion is sufficiently intense. The majority of earthquakes occur along boundaries of tectonic plates.

Seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake. The USGS Hazard Mapping Program produced probabilistic seismic hazard maps that show an estimate of the probability that ground motion would exceed a certain value, the peak ground acceleration, in 50 years (Rukstales and Petersen, 2019). The maps are generally based on the historic distribution, frequency, and magnitude of earthquakes in the United States. The peak ground acceleration, or the force caused by shaking, is expressed as a percentage of gravity (g). Low percentage g values reflect low ground acceleration values, and are generally associated with low seismic risk. According to the USGS, probabilistic hazard maps for the Project area indicate a 10 percent probability of experiencing an earthquake with an effective peak ground acceleration of between 0 and 1 percent g in a 50-year period and a 2 percent probability of experiencing an earthquake with an effective peak ground acceleration of 2 to 4 percent g in a 50-year period (Rukstales and Petersen, 2019). Additionally, according to the USGS Quaternary Fault and Fold Database, there are no Quaternary faults or Quaternary fault areas mapped within North Dakota (USGS, 2019c).

Based on earthquake records from the NDGS, the closest recorded earthquake to the Project area was a 3.3-magnitude earthquake that occurred in 2012 (Anderson, 2012). The earthquake was located about 15 miles west of the Tioga-Elkhorn Creek pipeline near MP 36.0 at a depth of approximately 0.4 mile below the ground surface (Anderson, 2012). The shaking was categorized as a III on the Modified Mercalli Intensity Scale (Anderson, 2012), which classifies earthquake intensity based on observed effects on people and structures, and ranges from Roman numeral I (not felt) to X (extreme shaking). An earthquake classified as III would be felt noticeably by people indoors, but would feel similar to the vibrations of a passing truck (USGS, 1989). The USGS 2018 seismic hazard model estimated a less than 4 percent chance of ground shaking corresponding to a Modified Mercalli Intensity of IV to occur in the Project area over a 100-year time period (Rukstales and Petersen, 2019).

A study of induced seismicity in the Williston Basin recorded nine earthquakes in the region between 2008 and 2011 (Frohlich et al., 2015). Three of these earthquakes were located near injection wells; however,

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based on the results of the study, only one earthquake may have been induced. This potentially induced magnitude-2.5 earthquake occurred in 2010 and was located approximately 37 miles west of the Tioga-Elkhorn Creek pipeline at MP 38. Overall, the study noted that the Williston Basin produced the fewest number of potentially induced earthquakes compared to oil and gas production areas in Texas, Oklahoma, and Arkansas. A 2018 study concluded that induced seismicity is low or absent in the Williston Basin because the vertical distance between faults in the Precambrian basement rock and depth of wastewater injection is greater than 1 kilometer (Skoumal et al., 2018). Based on the observations that induced seismicity is very low or absent in the Williston Basin, it is not anticipated that induced earthquakes will affect the Project area.

Soil liquefaction is a process whereby earthquake shaking or other rapid loading reduces the strength and stiffness of a saturated sandy soil. The result is a transformation of soil to a liquid state. Due to the reported absence of Quaternary faults and low seismic hazard, it is not anticipated that soil liquefaction will affect the Project area.

6.4.3 Landslides

Landslides are defined as the downslope movement of soil, rock, and organic materials induced by gravity, and include but are not limited to rock falls, debris flows, and slumps. Common landslide triggers include earthquakes, heavy rains, volcanic eruptions, erosion, or human activities. Landslides are more likely to occur in areas with steep slopes and soils that shrink or swell due to changes in moisture content. Landslide hazards are often assessed by evaluating landslide incidence, or areas where landslides have occurred in the past, and by evaluating landslide susceptibility, or areas where previous landslides are susceptible to future movement. Susceptibility to landslides is rated from low to high, based on the percent of an area affected by landslides (Godt, 1997):

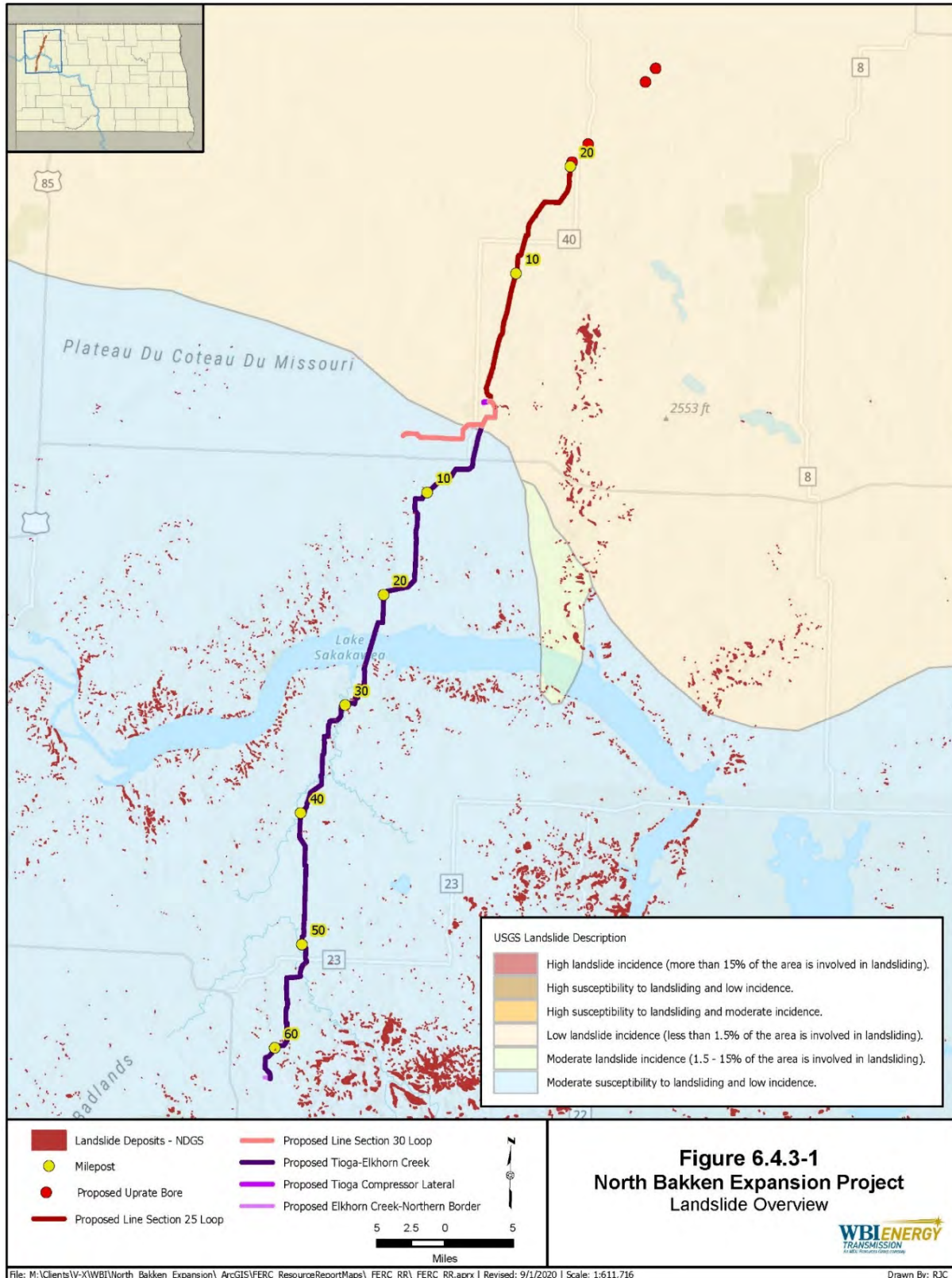
- low (less than 1.5 percent of the area affected by landslides);
- moderate (1.5 to 15 percent of the area affected); and
- high (greater than 15 percent of the area affected).

The Tioga-Elkhorn Creek pipeline between about MPs 3.1 and 62.8, the Elkhorn Creek-Northern Border pipeline, and the Line Section 25 Loop between about MPs 0.0 and 5.6 are located within an area of moderate landslide susceptibility; however, the incidence is classified as low. Figure 6.4.3-1 depicts the landslide susceptibility ratings and locations of mapped landslides in the Project area (NDGS, 2019b).

In North Dakota, landslides typically occur in the form of soil slides or rotational slumps, where soil and weathered rock glide or rotate downslope as a coherent layer caused by a combination of saturated soils and gravity. Soil slides or slumps tend to occur along steep slopes of river valleys and in unglaciated areas where the Tertiary Sentinel Butte and Bullion Creek formations are exposed (Trimble, 1979; Murphy, 2017). Landslide deposit maps indicate that most landslide deposits are associated with high-relief topography, such as those located approximately 5 miles east of Line Section 25 Loop MP 5.1 and approximately 1 mile east of MP 61.5 of the Tioga-Elkhorn Creek pipeline (NDGS, 2019b). Smaller-scale landslide deposits are associated with the north and south banks of Lake Sakakawea (NDGS, 2019b); however, the proposed intersect bore entry and exit locations for the HDD crossing of Lake Sakakawea will be set back from the bank by approximately 850 and 2,100 feet, respectively.

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Based on the National Elevation Dataset provided by the USGS, the Project is predominantly located within areas with slopes of less than or equal to 20 percent (USGS, 2017). Table 6.4.3-1 provides a summary of the percent slope crossed by the proposed pipeline routes. The maximum steep slope crossed by the Project is about 74 percent; however, this steep slope is located on the south bank of Lake Sakakawea and will be crossed using the HDD method. According to the USGS data, the pipeline routes cross slopes of greater than 20 percent along only about 0.7 mile (3,421 feet of the Tioga-Elkhorn Creek pipeline, 125 feet of the Line Section 25 Loop, and 264 feet of the Line Section 30 Loop). The remainder of the pipeline routes (99.3 percent) cross areas where slopes are 0 to 20 percent.

Because the Project is primarily located within areas of rolling hills and low relief, it is not anticipated that landslides will affect the Project. WBI Energy does not plan to conduct additional slope studies or prepare a landslide mitigation plan due to the low risk of landslides in the Project area.

TABLE 6.4.3-1				
North Bakken Expansion Project				
Summary of Slopes Crossed by the Proposed Pipeline Routes ^a				
Facility	County	Slope (percent)	Crossing Length (feet)	Crossing Length (miles)
Tioga-Elkhorn Creek				
	Williams	0 to 10	129,885	24.6
	Williams	10 to 20	2,439	0.5
	Williams	20 to 30	895	0.2
	Williams	30+	238	<0.1
	McKenzie	0 to 10	179,529	34.0
	McKenzie	10 to 20	16,151	3.1
	McKenzie	20 to 30	1,690	0.3
	McKenzie	30+	599	0.1
Elkhorn Creek-Northern Border				
	McKenzie	0 to 10	1,559	0.3
Line Section 25 Loop				
	Burke ^b	0 to 10	53,216	10.1
	Burke	10 to 20	530	0.1
	Burke	20 to 30	125	<0.1
	Mountrail	0 to 10	19,347	3.7
	Williams	0 to 10	34,593	6.6
	Williams	10 to 20	673	0.1
Line Section 30 Loop				
	Williams	0 to 10	49,532	9.4
	Williams	10 to 20	627	0.1
	Williams	20 to 30	162	<0.1
	Williams	30+	102	<0.1
Tioga Compressor Lateral				
	Williams	0 to 10	2,495	0.5
Uprate Line Section 25				
	Burke	0 to 10	1,282	0.2
	Burke	10 to 20	3	<0.1

^a Sourced from USGS, 2017

^b Total includes 86th Street Northwest/Norse Plant Reroute crossing length.

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6.4.4 Flooding

Hazards associated with flooding include stream bank erosion, scour, channel relocation, bedload movement, and debris flows. Based on information available from the Federal Emergency Management Agency for McKenzie County, the Project area is located within a minimal flood hazard zone (Zone X). Flood hazard information is not available for the Project area located within Williams, Mountrail, and Burke Counties. In these counties, WBI Energy will consult with county floodplain managers and will obtain approvals, as necessary, prior to construction within a flood zone. No aboveground structures will be installed within the mapped floodplain. As such, construction and operation of the Project will not affect flood storage or floodplain elevations.

Heavy or excessive rainfall in a relatively short time period can cause flash flooding and scour along streambanks and within flood zones. The U.S. Army Corps of Engineers manages the water level of the Lake Sakakawea reservoir through operations at the Garrison Dam to control flooding. Depth of this crossing will be finalized based on the over water geotechnical analysis to be completed in the spring of 2020. Estimated depth of cover is 300 feet; which will prevent damage to the pipeline from scour. A search of publicly available information did not return studies or evidence of past scour or flash flooding events where the Project crosses perennial waterbodies, including Tobacco Garden Creek, Beaver Creek, Cherry Creek, and White Earth Creek. The proposed guided bore depths for Tobacco Garden Creek, Beaver Creek, Cherry Creek, and White Earth Creek are 20, 13, 12, and 26.2 feet below ground surface, respectively, which exceed the minimum burial depth requirement of 49 CFR 192 for waterbodies that are less than 100 feet in width. Where the Project crosses these perennial waterbodies, the Project will be designed and installed at a burial depth necessary to prevent scour from exposing the pipelines in accordance with 49 CFR 192. Due to the absence of documented flood hazards associated with the perennial waterbodies crossed by the Project and the proposed depth of the guided bores, it is unlikely that hazards associated with scour and flooding will impact the Project.

6.5 Paleontological Resources

Paleontological resources are vertebrate and invertebrate fossils that are sometimes discovered at locations under excavation or in areas exposed by erosion. Direct effects on paleontological resources could occur during Project construction by activities such as grading or trenching. Indirect effects on fossil beds could result from erosion caused by slope regrading, vegetation clearing, and/or unauthorized collection. The Project will cross several geologic units that may host paleontological resources, including the Tertiary Sentinel Butte and Bullion Creek formations, and the Quaternary Coleharbor Group.

The sandstones and shales of the Sentinel Butte and Bullion Creek formations were deposited between 65 and 55 million years ago during erosion of the rising Rocky Mountains. The climate was sub-tropical with abundant swamps in the lowlands, and many types of vertebrates including turtles, alligators, crocodiles, and similar reptiles inhabited the area. Invertebrates such as insects, snails, and clams lived in the aquatic habitats. In addition, fossils of mammals, fish, fossil tracks, and plants are associated with the Sentinel Butte and Bullion Creek formations, and are considered to be relatively abundant within the formations. The Quaternary Coleharbor Group hosts fossils of vertebrates that existed during the Pleistocene, including mammoths, mastodons, ground sloths, giant bison, beavers, and horses, in addition to smaller organisms such as frogs, insects, fish, mollusks, and crustaceans. The remains found in these Pleistocene-age deposits tend to be poorly preserved (Hoganson, 2006).

Paleontological resources on land owned by the State of North Dakota and its political subdivisions are protected and managed under Chapters 54-17.3 and 43-04 of the North Dakota Century and Administrative

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Codes, respectively. A permit is required to investigate, excavate, collect, or otherwise record paleontological resources on these lands (NDGS, 2019c). The Project will cross North Dakota state lands between MPs 4.1 and 5.2 and MPs 14.7 and 14.9 of the Line Section 25 Loop. Century Code Chapter 54-17.3-05 requires the reporting of all Quaternary paleontological finds potentially or actually containing cultural resources to the State Historical Society of North Dakota in addition to the State Geologist (State of North Dakota, 2019).

Paleontological resources on U.S. Army Corps of Engineers and U.S. Forest Service lands are protected under the Paleontological Resources Preservation Act per 36 CFR 291.1. The Project will cross U.S. Forest Service lands between MPs 27.3 to 27.7 and MPs 28.2 to 29.9 of the Tioga-Elkhorn Creek pipeline. The Project will cross U.S. Army Corps of Engineers land between MPs 23.1 and 25.8 of the Tioga-Elkhorn Creek pipeline; all of the U.S. Army Corps of Engineers land will be encompassed within the proposed HDD crossing of Lake Sakakawea. WBI Energy obtained an Archaeological Resources Protection Act permit, which is required to conduct paleontological surveys within U.S. Forest Service and U.S. Army Corps of Engineers lands. These surveys were completed in October 2019, and the survey report is included in appendix 6B. No fossil localities were identified during the paleontological surveys. Multiple isolated and poorly preserved fossils of unidentifiable plant fragments and one incomplete invertebrate shell cast were identified; however, these fossils were not determined to be significant paleontological resources. No other paleontological resources were identified during the surveys.

Following the initial Project surveys, WBI Energy relocated a portion of the Project crossing U.S. Forest Service lands. Most of the modified area contains vegetation with no bedrock exposures. One drainage with small areas of potential exposed bedrock, in the northwestern corner of Section 13, T. 153 N., R. 97 W., is within the final Project area. This drainage will be crossed via the guided bore method, resulting in primarily subsurface disturbance. Based on the results of the original field surveys, few previous paleontological finds in this portion of the Little Missouri National Grassland, and the lack of bedrock exposures in the final Project area, U.S. Forest Service McKenzie Ranger District Minerals and Lands Supervisor Cale Bickerdyke (2020) confirmed in a telephone conversation with ERM that additional survey of the relocated Project area within the Little Missouri National Grassland is not required.

If paleontological resources are discovered during construction of the Project, they will be treated as cultural resources in accordance with WBI Energy's *Plan for Unanticipated Discovery of Paleontological Resources during Construction*, which is provided in appendix 1F of Resource Report 1.

6.6 Blasting

Based on a query of the Soil Survey Geographic database for soil characteristics in Mountrail, Burke, Williams, and McKenzie Counties (U.S. Department of Agriculture Natural Resources Conservation Service, 1991, 2002, 2003, 2006), approximately 143.5 acres (10 percent) of the Project area overlies soils where bedrock is shallower than 60 inches from the ground surface.

The shallow bedrock in the Project area is classified as paralithic, indicating it is weathered and could be ripped using typical construction equipment. As such, WBI Energy does not anticipate that blasting will be required during Project construction. The location of shallow bedrock by facility and milepost is listed in table 6.6-1. A total of approximately 11.1 miles of shallow bedrock will be crossed by the proposed pipeline facilities. Shallow bedrock is also present at approximately 1.6 acres associated with the Elkhorn Creek Compressor Station site, 0.3 acre at the Northern Border Interconnect, and 3.5 acres along temporary and permanent access roads.

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TABLE 6.6-1				
North Bakken Expansion Project				
Shallow Bedrock Along the Proposed Pipeline Routes ^a				
Pipeline Facility	Approximate Milepost Beginning	Approximate Milepost Ending	Crossing Length (miles) ^b	Bedrock Type ^c
Tioga-Elkhorn Creek	12.2	12.3	<0.1	Paralithic
	18.9	19.0	0.1	Paralithic
	19.1	19.4	0.2	Paralithic
	25.6	25.7	<0.1	Paralithic
	27.1	27.2	<0.1	Paralithic
	27.5	27.6	<0.1	Paralithic
	27.5	27.6	<0.1	Paralithic
	28.0	28.1	<0.1	Paralithic
	29.0	29.1	<0.1	Paralithic
	29.8	29.9	0.1	Paralithic
	33.3	33.6	0.2	Paralithic
	33.7	33.9	0.1	Paralithic
	34.0	34.1	<0.1	Paralithic
	34.3	34.3	<0.1	Paralithic
	34.4	35.1	0.2	Paralithic
	37.8	37.8	<0.1	Paralithic
	38.2	38.2	<0.1	Paralithic
	38.3	38.5	0.1	Paralithic
	38.5	38.7	0.1	Paralithic
	40.3	40.6	0.3	Paralithic
	40.7	41.0	0.3	Paralithic
	41.2	41.8	0.6	Paralithic
	41.8	42.1	0.2	Paralithic
	42.1	42.2	<0.1	Paralithic
	42.7	42.9	0.2	Paralithic
	42.9	43.0	0.1	Paralithic
	44.5	44.7	0.2	Paralithic
	45.0	45.5	0.5	Paralithic
	45.6	45.9	0.3	Paralithic
	48.4	48.4	<0.1	Paralithic
	48.9	49.1	0.1	Paralithic
	49.6	49.7	<0.1	Paralithic
	49.9	51.0	0.9	Paralithic
51.5	51.6	0.1	Paralithic	
51.8	52.1	0.3	Paralithic	
52.9	53.6	0.5	Paralithic	
53.7	53.8	<0.1	Paralithic	
53.9	53.9	<0.1	Paralithic	
54.7	54.9	0.1	Paralithic	
55.0	57.6	2.2	Paralithic	
57.7	58.6	0.8	Paralithic	
58.7	58.9	0.1	Paralithic	

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TABLE 6.6-1				
North Bakken Expansion Project Shallow Bedrock Along the Proposed Pipeline Routes ^a				
Pipeline Facility	Approximate Milepost Beginning	Approximate Milepost Ending	Crossing Length (miles) ^b	Bedrock Type ^c
	59.1	59.1	<0.1	Paralithic
	59.2	60.1	0.8	Paralithic
	60.2	60.3	0.1	Paralithic
	60.3	60.8	0.5	Paralithic
	61.1	61.1	<0.1	Paralithic
	61.4	61.9	0.2	Paralithic
	62.1	62.2	0.1	Paralithic
	62.3	62.5	0.1	Paralithic
	62.5	62.8	0.2	Paralithic
Elkhorn Creek-Northern Border				
	0.2	0.2	<0.1	Paralithic
	0.2	0.3	<0.1	Paralithic
Line Section 25 Loop				
	2.4	2.5	0.1	Paralithic
Total			11.1	

^a Based on soil mapping units that contain bedrock within 60 inches of the soil surface as identified by the U.S. Department of Agriculture Natural Resources Conservation Service

^b The entire length between mileposts presented does not contain shallow depth to bedrock, crossing length presents the total between those milepost ranges that have shallow depth to bedrock.

^c Paralithic = Rippable with standard construction equipment, will not likely require blasting

6.7 Design, Construction, and Mitigation

The proposed pipelines will be designed and installed in accordance with U.S. Department of Transportation standards (49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*), which will minimize or avoid potential impacts on the proposed facilities from potential geological hazards. Under these regulations, pipelines must be designed and constructed to provide adequate protection from washouts, floods, unstable soils, landslides or other hazards that may cause the pipe to move or sustain abnormal loads. For the proposed Project, no areas requiring special design or construction considerations as a result of geological hazards have been identified. Where the pipeline routes cross areas of steep slopes, potential impacts will be mitigated through the use of erosion control measures as described below. Additionally, WBI Energy notes that it avoided steep slopes to the extent practicable in routing the proposed pipelines.

With regard to topography, the construction techniques described in Resource Reports 1 and 7 will minimize the potential for slope failure and erosion. These techniques include the use of erosion control devices and other best management practices described in the FERC’s *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures*. In areas of steep side slope or rolling terrain, WBI Energy will install temporary sediment barriers such as silt fences, straw bales, straw logs, or snow berms during construction to prevent the movement of disturbed soil off the right-of-way (in accordance with the FERC Plan). As necessary, trench

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breakers (stacked sand bags or foam) will be installed in the trench around the pipe in steeply sloped areas to prevent movement of subsurface water along the pipeline. Temporary slope breakers consisting of mounded and compacted soil also will be installed across the right-of-way during construction (in accordance with the FERC Plan, and permanent slope breakers will be installed during cleanup or as soon as weather conditions permit. Trench breakers are designed to prevent preferential water flow along the pipeline trench by diverting subsurface water flow to the land surface; groundwater discharging at the land surface is then redirected off the right-of-way by the slope breakers. Used in combination, these structures prevent subsurface piping of soils that can lead to slope instability and failure.

Construction and operation of the proposed Project are not anticipated to have an impact on oil and natural gas resources. The trench excavations for the pipeline routes will not be deep enough to affect oil and gas deposits, which occur thousands of feet below ground surface. With regard to surface infrastructure, WBI Energy is working with producers to avoid or otherwise accommodate active or potential well sites and any feeder or gathering pipelines serving oil or gas wells in the vicinity of the proposed pipeline routes to minimize the potential for inadvertent damage to these facilities. Due to the density of oil and gas wells in the Project area, WBI Energy has consulted with landowners during the initial landowner outreach and civil survey process to determine if there are any additional oil and gas wells in the Project area, and to provide an opportunity for landowners to identify any proposed new wells. WBI Energy will continue to consult with landowners to verify the presence/absence of oil and gas wells within construction workspaces through the start of Project construction. Future oil and gas exploration within the new permanent right-of-way for the pipelines will be prohibited. The Project will be located near several former or currently active quarries; however, the Project is not expected to result in any significant impacts on industrial sand and gravel, scoria, or other mineral resources (e.g., lignite, salt). Future extractive activities will be prohibited within the pipeline rights-of-way and aboveground facility footprints.

Based on the soils present in the Project area, WBI Energy does not expect that blasting will be required to excavate the trench; however, if shallow bedrock or boulders are encountered that cannot be removed by conventional methods, blasting may be required. If blasting is necessary, WBI Energy's construction contractor will use blasting techniques in compliance with state and federal regulations governing the use of explosives to assist in the removal of rock from the pipeline trench. WBI Energy will use the minimum explosive charge necessary to fracture bedrock and keep shot-rock from leaving the construction right-of-way. To avoid damage, the contractor will conduct pre-blasting evaluations of the rock, as needed, and develop specific blasting operations and monitoring plans. Control of blasting will limit stresses on existing pipelines, nearby domestic structures, water supply wells, or electric transmission tower footings that may be located near the Project area. Blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified.

Due to the soil types in the Project area, WBI Energy does not anticipate that the Project will generate substantial quantities of rock debris. However, if rock debris is generated during construction, WBI Energy will not permanently windrow rock along the right-of-way without permission from the landowner. Disposal of rock debris will be in areas approved by the individual landowners in accordance with the Plan and regulatory requirements. Should WBI Energy have to dispose of excess rock outside of the rights-of-way, an approved landfill or alternative upland area will be utilized. The necessary permits and clearances will be obtained for off right-of-way disposal areas.

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6.8 New or Updated References

- Bickerdyke, C. 2020. United States Forest Service Little Missouri National Grasslands. Personal Communication with A. Thornton, ERM. July 20, 2020
- Clayton, L., Carlson, C.G., Moore, W.L., Groenewold, G., Holland, Jr., F.D., and Moran, S.R. 1977. The Slope (Paleocene) and Bullion Creek (Paleocene) Formations of North Dakota. North Dakota Geological Survey Report of Investigation No. 59. Available online at: https://www.dmr.nd.gov/ndgs/Publication_List/pdf/RI%20SERIES/RI-59.pdf. Accessed April 10, 2020.
- Clayton, L., Moran, S.R., and Bluemle, J.P. 1980. Explanatory Text to Accompany the Geologic Map of North Dakota. North Dakota Geological Survey Report of Investigation No. 69. Available online at: https://www.dmr.nd.gov/ndgs/documents/Publication_List/pdf/RISeries/RI-69.pdf. Accessed April 10, 2020.
- Forsman, N.F. 1989. The Sentinel Butte Formation (Paleocene), North Dakota. Sedimentology of the Bullion Creek and Sentinel Butte Formations (Paleocene), Western North Dakota. Available online at: <http://archives.datapages.com/data/ndgs/data/010/016/016.html>. Accessed April 10, 2020.

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7.0 UPDATES TO RESOURCE REPORT 7 – SOIL RESOURCES

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

7.3 General Construction Impacts and Mitigation

Soils within the Project workspace were evaluated to identify prime farmland and major soil characteristics that could affect construction or increase the potential for construction-related soil impacts. Table 7.3-1 provides a summary of the significant soil characteristics for soils that will be affected by the proposed Project. Project facility type, individual soil characteristics, and potential mitigation measures that will be employed for each characteristic are discussed separately below.

7.3.1 Pipeline Facilities

Prime Farmland

The USDA defines prime farmland as “land that is best suited to food, feed, fiber, and oilseed crops” (Soil Survey Division Staff, 1993). This designation includes cultivated land, pastureland, woodland, or other lands that are either used for food or fiber crops or are available for these uses. Urbanized land and open water are excluded from prime farmland. Prime farmland typically contains few or no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., if a flooding tendency is mitigated by artificial drainage). In some areas, land that does not meet the criteria for prime farmland is considered farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The appropriate state agencies determine the criteria for defining and delineating farmland of statewide importance, which generally includes areas that economically produce high yields of crops when treated and managed according to acceptable farming methods. Impacts on prime farmland are of general concern because of the potential for decreases in long-term agricultural productivity.

Prime farmland designations are direct attributes in the SSURGO database. Percentages and acreages of prime farmland were determined by a simple query of the database. Approximately 549.8 acres (49 percent) of the soils that will be affected by pipeline construction are considered prime farmland. Topsoil and subsoil will be disturbed as a result of topsoil removal, grading, trench excavation, and heavy equipment moving along the right-of-way. These activities could cause mixing of topsoil or surface soil with the subsoil and potentially result in a loss of soil productivity. To prevent mixing of the soil horizons or incorporation of additional rock into the topsoil, topsoil segregation will be performed 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. Topsoil will be segregated, as appropriate, from the subsoil and will be replaced in the proper order during backfilling and final grading. Implementation of proper topsoil segregation will help promote post-construction revegetation success, thereby minimizing loss of crop productivity and the potential for long-term problems with erosion.

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TABLE 7.3-1								
North Bakken Expansion Project								
Acres of Soil Characteristics Affected by the Proposed Project ^a								
Facility	Total Acres	Prime Farmland ^b	Compaction Prone ^c	Highly Erodible		Revegetation Concerns ^f	Rocky ^g	Shallow Bedrock ^h
				Water ^d	Wind ^e			
Pipeline Facilities ⁱ								
Tioga-Elkhorn Creek	802.3	393.6	3.0	258.6	47.0	202.8	32.9	134.3
Elkhorn Creek-Northern Border	2.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Line Section 25 Loop	210.8	86.5	15.1	59.4	0.0	22.6	25.6	0.4
Line Section 30 Loop	96.9	63.7	2.2	20.9	0.0	17.3	4.8	0.0
Tioga Compressor Lateral	4.4	3.1	0.0	0.6	0.0	0.0	0.0	0.0
Uprate Line Section 25	15.3	2.8	2.9	7.6	0.0	6.6	1.5	0.0
Subtotal	1,132.3	549.8	23.1	347.2	47.0	249.2	64.9	134.8
Aboveground Facilities ^j								
Elkhorn Creek Compressor Station	13.1	0.0	0.0	5.4	0.0	3.9	3.4	1.6
Tioga Compressor Station	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0
Lignite Plant Receipt Station and Lignite Town Border Station	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Norse Plant Receipt Station	0.6	0.2	0.0	0.0	0.0	0.0	0.4	0.0
Norse Transfer Station	1.5	1.1	0.0	0.0	0.0	0.0	0.4	0.0
Northern Border Interconnect	4.2	0.0	0.0	1.4	0.0	1.1	0.7	0.3
Robinson Lake Plant Receipt Station	1.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Springbrook Plant Receipt Station	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Tioga Plant Receipt Station	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Block valves ^k	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Pig launchers/receivers ^l	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	33.4	15.2	0.0	6.7	0.0	4.9	5.0	1.9

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TABLE 7.3-1

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Acres of Soil Characteristics Affected by the Proposed Project ^a**

Facility	Total Acres	Prime Farmland ^b	Compaction Prone ^c	Highly Erodible		Revegetation Concerns ^f	Rocky ^g	Shallow Bedrock ^h
				Water ^d	Wind ^e			
Access Roads								
Temporary Access Roads	43.4	16.5	1.6	16.5	3.0	12.4	3.5	3.4
Permanent Access Roads	2.6	0.7	0.0	0.9	0.0	0.5	0.3	0.1
Subtotal	46.0	17.2	1.6	17.4	3.0	12.9	3.7	3.5
Staging Areas								
68th Street Yard	20.4	0.0	0.6	5.0	0.0	5.0	13.5	0.0
Boehm Staging Yard	6.2	4.9	0.0	0.0	0.0	0.0	1.3	0.0
CRS Yard	22.8	0.5	0.0	3.2	0.0	10.5	22.3	0.0
Delta Contractors Yard	23.6	22.3	0.0	1.4	0.0	1.4	0.0	0.0
Enget Yard	39.8	0.0	0.3	33.6	0.0	39.2	39.2	0.0
Flatlands Yard 1	4.9	4.4	0.0	0.4	0.0	0.3	0.0	0.0
Flatlands Yard 2	6.1	0.0	0.0	1.9	0.0	1.9	5.5	0.0
Lobell Yard	39.5	36.6	0.1	1.8	0.0	0.0	0.0	0.0
Schmidt Yard	8.4	1.4	0.0	4.5	0.0	0.0	0.0	0.0
Weflen Staging Yard	17.7	15.6	0.0	1.4	0.0	0.0	0.0	0.0
Franz Yard	22.2	14.4	0.0	7.8	2.0	4.1	0.0	3.3
Aux Sable Yard	46.2	43.7	0.0	1.2	0.0	0.2	0.0	0.0
Subtotal	257.8	143.7	1.0	62.2	2.0	62.7	81.7	3.3
Total	1,469.5	725.9	25.7	433.8	52.0	329.7	155.3	143.5

Sources: Soil Survey Staff, 2020a and 2020b

^a The area affected includes all permanent and temporary workspace (including additional temporary workspace). The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. The values in each row do 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. The soils in the table do not include areas of open water.

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TABLE 7.3-1

**North Bakken Expansion Project
 Acres of Soil Characteristics Affected by the Proposed Project ^a**

Facility	Total Acres	Prime Farmland ^b	Compaction Prone ^c	Highly Erodible		Revegetation Concerns ^f	Rocky ^g	Shallow Bedrock ^h
				Water ^d	Wind ^e			
^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.							
^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 cobbly, 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.							
ⁱ	Includes the appurtenant facilities within the pipeline rights-of-way (e.g., block valves, cathodic protection facilities).							
^j	Includes the appurtenant facilities within the aboveground facility sites (e.g., pig launcher/receiver).							
^k	Four of the six proposed block valves (Valve No. 13.6, the 56th Avenue N.W. Block Valve, the Highway 10 Block Valve, and the South Lake Block Valve) will be constructed entirely within the permanent pipeline rights-of-way, and no additional land will be required for their construction or operation. However, the Cherry Creek Block Valve and Valve No. 6.8 will require an additional 0.9 and less than 0.1 acre of land, respectively, outside the existing permanent pipeline right-of-way for construction and operation.							
^l	One pig launcher/receiver site will be constructed at MP 6.1 of the Tioga-Elkhorn Creek pipeline. The remaining pig launcher/receiver sites will be constructed and operated within the compressor/meter station sites; no additional land will be required for construction and operation of these facilities.							

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Drain Tiles – No Edits

Irrigation Systems – No Edits

Compaction Potential

Soil compaction modifies the structure and reduces the porosity and moisture-holding capacity of soils. Construction equipment traveling over wet soils could disrupt the soil structure, reduce pore space, increase runoff potential, or cause rutting. The degree of compaction depends on moisture content, and soil texture. Fine-textured soils with poor internal drainage and/or that are moist or saturated during construction are most susceptible to compaction and rutting.

Compaction-prone soils were identified by querying the SSURGO database for soil components that have (1) a surface texture of sandy clay loam or finer, and (2) a drainage class of somewhat poorly, poorly, or very poorly drained. Approximately 23.1 acres (2 percent) of the soils that will be affected by pipeline construction are prone to compaction. During construction, WBI Energy will implement measures outlined in the FERC Plan to minimize compaction and rutting. In addition, environmental inspectors (EI) could recommend restricting construction activities in areas with unfavorable conditions (e.g., saturated soils) to further reduce compaction and rutting. WBI Energy will further mitigate compaction by using a paraplow or similar implement to conduct deep tillage operations during restoration. In areas where topsoil segregation occurs, plowing to alleviate subsoil compaction will be conducted before replacement of the topsoil.

Erosion Potential

Erosion is a continuing natural process that can be accelerated by human disturbance. Factors that influence the degree of erosion include soil texture, structure, length and percent of slope, vegetation cover, and rainfall or wind intensity. Soils most susceptible to erosion by water are typified by bare or sparse vegetation cover, non-cohesive soil particles with low infiltration rates, and moderate to steep slopes. Wind erosion processes are less affected by slope angles, and more affected by grain size. Medium textured soils (e.g., very fine sandy loams, fine sandy loams, and silt loams) are most susceptible to wind erosion. Topsoil removal, clearing, grading, and equipment movement could accelerate the erosion process and, without adequate protection, result in discharge of sediment to waterbodies and wetlands. Soil loss due to erosion could also reduce soil fertility and impair revegetation.

Map units with a land capability subclass designation of 4E through 8E, which are considered to have severe to extreme erosion limitations for agricultural use and/or an average slope greater than 8 percent, were identified as susceptible to water erosion. Approximately 347.2 acres (31 percent) of the soils that will be affected by pipeline construction are considered susceptible to erosion by water. WBI Energy will utilize erosion and sedimentation control devices in accordance with the FERC Plan. Temporary erosion controls (silt fences, straw bales, or straw logs) will be installed, where appropriate, during clearing to prevent the movement of disturbed soils off the right-of-way or other work areas. As necessary, trench breakers (stacked sand bags or foam) will be installed in the trench around the pipe to prevent movement of subsurface water along the pipeline. Additionally, temporary slope breakers consisting of mounded and compacted soil will be installed across the right-of-way in areas required by the FERC Plan and Procedures. Temporary slope breakers will be installed during clearing and grading activities, and permanent slope breakers will be installed during cleanup or as soon as weather conditions permit in accordance with the

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FERC Plan and Procedures. WBI Energy's EIs will inspect sedimentation and erosion control devices on a regular basis as specified in the FERC Plan and Procedures.

Wind erodibility was assessed based on wind erodibility group (WEG) designations. A WEG is a grouping of soils that has similar surface-soil properties affecting its resistance to soil blowing, including texture, organic matter content, and aggregate stability. Soils in WEG 1 and 2 include sandy-textured soils with poor aggregation that are particularly susceptible to wind erosion. Approximately 47.0 acres (4 percent) of the soils that will be affected by pipeline construction have a WEG classification of 2 or less and are considered highly wind erodible. Should it be necessary to control fugitive dust emissions, WBI Energy will apply water, mulch, or tackifiers to exposed work areas and/or topsoil storage piles during construction.

Temporary Sediment Barriers – No Edits

Slope Breakers – No Edits

Permanent Trench Breakers – No Edits

Timing – No Edits

Revegetation – No Edits

Mulch – No Edits

Revegetation Concerns

Droughty soils that have a coarse surface texture and are somewhat excessively and excessively drained may prove to be difficult to revegetate. The drier soils have less water to aid in the germination and eventual establishment of new vegetation. The coarser textured soils also have a lower water holding capacity following precipitation, which could result in moisture deficiencies in the root zone creating unfavorable conditions for many plants. In addition, steep slopes along some parts of the pipeline routes may make the establishment of vegetation difficult.

Soils with revegetation concerns were identified by querying the SSURGO database for soil components that (1) have a surface texture of sandy loam or coarser, (2) are moderately well to excessively drained, and (3) have an average slope greater than or equal to 9 percent. Approximately 249.2 acres (22 percent) of the soils that will be affected by pipeline construction are considered to have revegetation concerns. Successful restoration and revegetation is important for maintaining agricultural productivity and to protect the underlying soil from potential damage, such as erosion. In accordance with the FERC Plan, WBI Energy will apply soil amendments in areas with poor revegetation potential, as necessary, to create a favorable environment for the re-establishment of vegetation.

In October 2019, WBI Energy contacted four regional NRCS offices to request comments on proposed seed mixes for the Project (see appendix 1G of Resource Report 1). These seed mixes were designed for reseeding private land based on observations during field surveys and in accordance with the NRCS Field Office Technical Guide and the North Dakota Department of Transportation *2014 Standards and Specifications for Road and Bridge Construction*. Federally managed land affected by the Project will be restored in accordance with recommendations provided by the U.S. Forest Service. As of August 2020,

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WBI Energy has received comments from one of the four NRCS offices. WBI Energy will continue to consult with the NRCS and provide any additional responses and incorporated recommendations as they are available.

WBI Energy has initiated consultations with the Farm Service Agency to determine if any lands crossed by the Project are enrolled in the Conservation Reserve Program. WBI Energy will continue to consult with the Farm Service Agency and work with landowners on any specific seeding requirements.

Rocky Soils and Shallow Bedrock

Introducing stones or rocks to surface soil layers may reduce soil moisture-holding capacity, resulting in a reduction of soil productivity. Additionally, some agricultural equipment may be damaged by contact with large rocks and stones. Rock fragments and stones at the surface and in the surface layer may be encountered during grading, trenching, and backfilling.

Shallow-to-bedrock soils were identified by querying the SSURGO database for soil components that have bedrock within 60 inches of the soil surface. The analysis also identified whether the near-surface bedrock is lithic (consolidated crystalline rock) and would require blasting to excavate, or is paralithic (unconsolidated weathered rock) and could likely be ripped and dug without blasting (see Resource Report 6 for more information regarding bedrock and blasting). Approximately 134.8 acres (12 percent) contain bedrock within 60 inches of the surface. All of the bedrock identified is paralithic and will likely be rippable using standard construction equipment.

Soils with significant quantities of rock were identified by querying the SSURGO database for component soil series that have either (1) a cobbly, stony, bouldery, shaly, very gravelly, or extremely gravelly modifier to the textural class, or (2) contain greater than 5 percent (by weight) of rocks larger than 3 inches. Approximately 64.9 acres (6 percent) of the soils that will be affected by pipeline construction are considered rocky soils.

The introduction of subsoil rocks into agricultural topsoil will be minimized by segregating topsoil from trench spoil and replacing topsoil during cleanup and restoration. WBI Energy will remove excess rock from surface soils disturbed by construction so that the size, density, and distribution of rock on the construction right-of-way is similar to adjacent areas not disturbed by construction. If bedrock is encountered, WBI Energy will take necessary precautions to minimize the mixing of excavated bedrock with backfill, and will replace rock in the trench to a level that is not higher than the original bedrock profile. Where necessary, excess rock will be hauled off the right-of-way or else disposed of on the right-of-way, subject to landowner approval and any applicable permit conditions.

7.3.2 Aboveground Facilities

The proposed Project will require construction of one greenfield compressor station (Elkhorn Creek Compressor Station), modifications to the Tioga Compressor Station, and construction of or modifications to delivery, receipt, and transfer stations, block valves,²⁵ pig launcher and receiver facilities, and associated appurtenances. Each of these facilities will be fenced and retained for Project operations.

²⁵ Construction and operation of the block valves will occur within the permanent pipeline easement, and the associated impacts are included in the pipeline facilities section.

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Construction of the greenfield Elkhorn Creek Compressor Station will affect approximately 13.1 acres, of which approximately 10.9 acres will be permanently converted to commercial/industrial use. None of the soils affected are considered to be prime farmland or farmland of statewide importance.

Modifications to the Tioga Compressor Station will affect approximately 8.0 acres during construction and result in an expansion of the fence line to permanently convert an additional 2.2 acres to commercial/industrial use (resulting in a total of approximately 4.4 acres of land retained for operation). All of the soils affected by construction and operation of the Tioga Compressor Station are considered to be farmland of statewide importance; however, none are currently being used for agricultural purposes.

Construction of the greenfield Norse Transfer Station, Northern Border Interconnect, block valves, and pig launchers/receivers will affect approximately 7.6 acres during construction and permanently convert approximately 5.5 acres of land to commercial/industrial use. Approximately 2.3 acres of the permanently converted land is considered either prime farmland (0.2 acre) or farmland of statewide importance (2.1 acres). Portions of the Northern Border Interconnect are currently being used for agricultural purposes.

Modifications to the existing Lignite Town Border and Lignite Plant Receipt Station, Norse Plant Receipt Station, Robinson Lake Plant Receipt Station, Springbrook Plant Receipt Station, and Tioga Plant Receipt Station will affect approximately 4.7 acres and permanently convert approximately 3.3 acres of land to commercial/industrial use. Approximately 2.9 acres of permanently converted land is considered to be farmland of statewide importance. Portions of the Springbrook Plant Receipt Station and Robinson Lake Plant Receipt Station are currently being used for agricultural purposes.

7.3.3 Access Roads

WBI Energy will use existing public and private access roads on a temporary basis to transport personnel, equipment, vehicles, and materials to the proposed Project work areas during construction. Standard-maintenance public roads will be used for access without modification or improvement. However, some minimum-maintenance public roads and private roads will require improvement (such as grading; placement of gravel, crushed rock, or scoria for stability and surface improvement; replacing or installing culverts; and clearing of overhead vegetation, if present) to safely accommodate Project equipment and vehicles. The use of existing dirt access roads could cause minimal disturbance to soils; however, these areas are already disturbed and therefore a discussion of potential impacts is not included in this report.

Use of temporary access roads will affect approximately 43.4 acres. Ten permanent access roads (affecting approximately 2.6 acres) will be graveled or paved and retained during operation to provide access to Project facilities. Use of the permanent access roads will not affect any soils considered to be prime farmland. Approximately 0.7 acre are considered farmland of statewide importance, none of which are currently being used for agricultural purposes as they are existing roads.

7.3.4 Staging Areas

WBI Energy anticipates the need for approximately 257.8 acres of land for use as twelve temporary staging areas. Preparation of the staging areas will consist of topsoil segregation and minor grading and leveling. Topsoil stockpiles will be stabilized with a cover species such as wheat, oats, or ryegrass to establish a temporary cover, or by spraying with water or an approved chemical dust suppressant to create a semi-hard protective layer to minimize wind erosion. Once construction is complete, the land within the staging areas

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will be restored to preconstruction conditions in accordance with the FERC Plan and landowner agreements. As a result, there will be no permanent impacts on the soils in these areas.

The 68th Street Yard is approximately 2.7 miles west of the Tioga Compressor Station on 68th Street. Use of the yard will temporarily affect approximately 20.4 acres of land. Soils at the 68th Street Yard include Zahl-Max-Bowbells loams, Parnell silty clay loam, and Lehr loam. None of these soils are considered prime farmland or farmland of statewide importance.

The Boehm Staging Yard is approximately 24.5 miles south-southwest of the Tioga Compressor Station on North Dakota Highway 1806. Use of the yard will temporarily affect approximately 6.2 acres of land. Soils at the Boehm Staging Yard consist of Velva fine sandy loam, Lehr-Bowdle loams, and Tally fine sandy loam. Approximately 4.9 acres are considered farmland of statewide importance.

The CRS Yard is approximately 2.0 miles northwest of the Tioga Compressor Station on North Dakota Highway 40. Use of the yard will temporarily affect approximately 22.8 acres of land. Soils at the CRS Yard consist of Velva fine sandy loam, Lehr-Bowdle loams, William-Bowbell loams, and Dooley-Zahl complex. Approximately 0.5 acre is considered farmland of statewide importance.

The Delta Contractors Yard is approximately 49.0 miles south-southwest of the Tioga Compressor Station on U.S. Route 85. Use of the yard will temporarily affect approximately 23.6 acres of land. Soils at the Delta Contractors Yard consist of Belfield-Grail clay loams, Tally-Parshall fine sandy loams, Williams-Bowbells loams, and Dooley-Zahl complexes. Approximately 22.3 acres of these soils are considered farmland of statewide importance.

The Enget Yard is located approximately 2.4 miles northeast of the Tioga Compressor Station on 101st Avenue. Use of the yard will temporarily affect approximately 39.8 acres of land. Soils at the Enget Yard consist of Zahl-Max loams, Zahl-Williams-Bowbells loams, Southam silty clay loam, Appam sandy loam, and Wabek-Lehr-Appam complex. None of these soils are considered prime farmland or farmland of statewide importance.

The Flatlands Yard 1 is approximately 25.0 miles southwest of the Tioga Compressor Station on North Dakota Highway 1806. Use of the yard will temporarily affect approximately 4.9 acres of land. Soils at the Flatlands Yard 1 consist of Williams-Zahl loams, Zahl-Williams loams, Zahl-Max loams, and Dooley-Zahl complex. Approximately 4.4 acres are considered to be farmland of statewide importance.

The Flatlands Yard 2 is approximately 26.0 miles south-southwest of the Tioga Compressor Station on 115th Avenue. Use of the yard will temporarily affect approximately 6.1 acres of land. Soils at the Flatlands Yard 2 consist of Tally-Parshall fine sandy loams, Manning-Schaller-Wabek complex, and Manning fine sandy loam. Less than 0.1 acres of these soils are considered farmland of statewide importance.

The Lobell Yard is located approximately 7.0 miles southwest of the Tioga Compressor Station on U.S. Route 2. Use of the yard will temporarily affect approximately 39.5 acres of land. Soils at the Lobell Yard consist of Sahl-Williams-Zahill complex, Williams-Bowbells loams, Divide loam, Orthents-Aquents-Urban land, Nutley silty clay, and Lehr-Wabek loams. Approximately 36.6 acres of these soils are considered to be farmland of statewide importance.

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The Schmidt Yard is located approximately 7.0 miles southwest of the Tioga Compressor Station on U.S. Route 2, approximately 0.25 mile west of the Lobell Yard. Use of this yard will temporarily affect approximately 8.4 acres of land. Soils at the Schmidt Yard consists of Zahl-Williams-Zahill complex and Williams-Zahl loams. Approximately 1.4 acres of these soils are considered to be farmland of statewide importance.

The Weflen Staging Yard is approximately 2.7 miles north-northwest of the Tioga Compressor Station on North Dakota Highway 40. Use of the yard will temporarily affect approximately 17.7 acres of land. Soils at the Weflen Staging Yard consist of Zahl-Williams-Zahill complex and Williams-Bowbells loams. Approximately 15.6 acres are considered farmland of statewide importance.

The Franz Yard is approximately 2.5 miles west-southwest of the Cherry Block Valve on 14th Ave SE. Use of this yard will temporarily affect 22.2 acres of land. Soils at the Franz Yard consists of Dooley-Zahl complex, Flasher-Vebar-Parshall complex, and Tally-Parshall fine sandy loams. Approximately 14.4 acres of these soils are considered to be farmland of statewide importance.

The Aux Sable Yard is approximately 0.1 mile south of the Tioga Compressor Station on 68th St NW. Use of this yard will temporarily affect 46.2 acres of land. Soils at the Aux Sable Yard consists of Williams-Bowbells loams, Williams-Zahl-Zahill complex, and Zahl-Max-Arnegard loams. Approximately 43.7 acres of these soils are considered to be farmland of statewide importance.

7.4 Cumulative Impacts

Section 1.10 of Resource Report 1 defines a cumulative impact and describes the general scope of the cumulative impact analysis. This section describes the potential cumulative impacts on soils from the Project when combined with the past, present, and reasonably foreseeable future actions (RFFA) identified in appendix 1J and figure 1.10-1 of Resource Report 1. The location, proposed schedule, and a description of each RFFA are provided in appendix 1J.

The cumulative impact assessment focuses on impacts from RFFAs that could reasonably extend into the area of direct soil disturbance associated with the Project. Soil impacts are expected to occur during construction and continue until the soils have been restored.

As described above, pipeline construction activities for the proposed Project could result in soil erosion, reduction in topsoil quality, compaction, or disruption of water drainage. Additionally, construction of aboveground facilities and permanent access roads will permanently convert approximately 26.7 acres of land (including approximately 0.2 acre of prime farmland and approximately 10.1 acres of farmland of statewide importance) to commercial/industrial use.

Four RFFAs fall within the Project's geographic and temporal scope for soil resources, including the Aurora Wind Electric Transmission Line, Gunslinger Federal and Gladstone Oil and Gas Well Pads, Cenex Pipeline's 10-inch-diameter refined fuels pipeline, and the Western Area Water Supply Project. More information regarding these projects is included in appendix 1J of Resource Report 1. A minimal amount of overlap occurs between these RFFAs and the proposed Project, estimated to be less than 5 acre. A description of potential impacts on soils associated with these projects is provided below.

- Construction activities associated with the Aurora Wind Electric Transmission Line may cause the soil surface to become more prone to wind and water erosion and may result in soil compaction. Erosion and sediment control measures will include segregation of topsoil

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and the use of appropriately sized construction equipment. Additionally, Aurora Wind will verify that access road grades fit closely with the natural terrain, soil cuttings are properly disposed of, and proper drainage is maintained. Project construction will temporarily affect approximately 225 acres of prime farmland or farmland of statewide importance; however, less than 0.2 acre of prime farmland or farmland of statewide importance will be retained for project operation.

- Construction and operation of the Gunslinger Federal and Gladstone oil and gas well pads would have both temporary and permanent impacts on soils. Erosion and sediment control structures would be installed during ground-disturbing activities to stabilize soils and minimize runoff. The proposed alternative would include approximately 50.4 acres of impact, including 23.9 acres associated with the well pads and access roads which would be permanent.
- During construction of Cenex Pipeline’s 10-inch-diameter refined fuels pipeline, Cenex Pipeline will use construction equipment that reduces potential soil compaction and impacts on vegetation. The risk of soil contamination from a potential release of crude oil by way of a pipeline integrity emergency in the proposed pipeline will be minimal. Potential agricultural losses from the temporary disturbance of 670.8 acres of prime farmland are anticipated to be minor or non-existent. Aboveground facilities associated with the project would result in conversion of approximately 0.3 acre of prime farmland to non-agricultural uses.
- Little information is publically available regarding the potential impacts of the Western Area Water Supply Project; however, it is likely that soil impacts would be similar to the proposed pipeline projects described above. Impacts could include water or wind erosion, mixing of topsoil with subsoil, soil compaction, and disruption of surface and subsurface drainage systems.

With implementation of the mitigation measures described in section 7.3, the Project will result in limited and temporary impacts on soils. While both the Project and the RFFAs could contribute to soils impacts within the overlapping construction areas (less than 5 acres) during pipeline construction and restoration, these impacts will be temporary and highly localized. Permanent impacts on soils will be limited to aboveground facility footprints. While the Project will result in some soil impacts, significant cumulative impacts are not expected when combined with the impacts of the abovementioned RFFAs due to the localized nature of the soil impacts.

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8.0 UPDATES TO RESOURCE REPORT 8 – LAND USE, RECREATION, AND AESTHETICS

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

8.2 Land Use Requirements

Existing land uses within the construction and operational footprints of the Project, including the permanent and temporary pipeline rights-of-way, additional temporary workspace (ATWS), staging areas, permanent and temporary access roads, and aboveground facilities are summarized in table 8.2-1. A more detailed description of land uses within the Project area is provided in sections 8.2.1 through 8.2.5.

8.2.1 Pipeline Right-of-Way

WBI Energy is proposing to use the standard 75-foot-wide construction right-of-way for the proposed 12-inch-diameter Line Section 25 and Line Section 30 Loops and the 20-inch-diameter Tioga Compressor Lateral. Construction of the proposed 24-inch-diameter Tioga-Elkhorn Creek and Elkhorn Creek-Northern Border pipelines will require a 100-foot-wide construction right-of-way. This additional 25 feet of right-of-way width will be necessary to provide sufficient workspace to accommodate topsoil storage while allowing safe passage of construction equipment and material along the working side of the right-of-way during construction. On U.S. Forest Service (USFS) lands crossed by the Tioga-Elkhorn Creek pipeline, construction will be limited to a 50-foot-wide right-of-way with a 25-foot-wide stretch of temporary workspace for topsoil segregation and travel lanes.

As shown in the drawings provided in appendix 1C of Resource Report 1, the construction right-of-way typically will consist of a 50-foot-wide working side and a 25-foot-wide spoil side for the standard 75-foot-wide construction right-of-way, and a 70-foot-wide working side and a 30-foot-wide spoil side for the 100-foot-wide construction right-of-way. Following construction, a 50-foot-wide permanent easement will be retained for pipeline operations; the remainder of the construction right-of-way will be restored to pre-existing conditions.

The Tioga-Elkhorn Creek pipeline and Line Section 30 Loop will be collocated from the Tioga Compressor Station to approximately milepost (MP) 2.8 of the Tioga-Elkhorn Creek pipeline (MPs 6.8 to 9.6 of the Line Section 30 Loop). Overlapping portions of the temporary and permanent rights-of-ways along the collocated distance will be used during construction and/or operation of both pipelines.

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TABLE 8.2-1													
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Land Uses Affected by Construction and Operation of the Project (in acres) ^a													
Facility/County/Workspace	Agricultural		Open Land		Forest		Developed		Open Water		Total		
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	
Burke													
Pipeline Facilities													
Line Section 25 Loop	61.8	41.1	25.5	17.5	0.0	0.0	2.4	1.6	<0.1	<0.1	89.7	60.2	
Uprate Line Section 25	0.6	0.4	2.4	2.0	0.0	0.0	0.8	0.6	0.0	0.0	3.8	3.0	
ATWS													
Line Section 25 Loop	8.8	0.0	4.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	13.9	0.0	
Uprate Line Section 25	3.8	0.0	7.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0	11.5	0.0	
Aboveground Facilities													
Norse Plant Receipt Station	<0.1	<0.1	0.3	0.3	0.0	0.0	0.3	0.3	0.0	0.0	0.6	0.6	
Norse Transfer Station	<0.1	<0.1	1.2	0.3	0.0	0.0	0.3	0.0	0.0	0.0	1.5	0.3	
Lignite Plant Receipt Station and Lignite Town Border Station	0.0	0.0	0.1	0.1	0.0	0.0	0.4	0.4	0.0	0.0	0.5	0.5	
Access Roads	5.1	0.1	2.1	<0.1	0.0	0.0	1.4	<0.1	0.0	0.0	8.6	0.1	
Subtotal	80.1	41.6	43.3	20.2	0.0	0.0	6.7	2.9	<0.1	<0.1	130.1	64.7	
McKenzie													
Pipeline Facilities													
Tioga-Elkhorn Creek	241.2	121.0	180.3	98.7	1.1	0.6	8.6	4.5	2.1	2.1	433.3	226.9	
Elkhorn Creek-Northern Border	2.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	1.4	
ATWS													
Tioga-Elkhorn Creek	11.0	0.0	18.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	31.2	0.0	

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TABLE 8.2-1												
North Bakken Expansion Project												
Land Uses Affected by Construction and Operation of the Project (in acres) ^a												
Facility/County/Workspace	Agricultural		Open Land		Forest		Developed		Open Water		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Staging Areas												
Boehm Staging Yard	0.0	0.0	6.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	6.2	0.0
Delta Contractors Yard	13.1	0.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	23.6	0.0
Flatlands Yard 1	4.2	0.0	0.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0	4.9	0.0
Flatlands Yard 2	0.3	0.0	1.1	0.0	0.0	0.0	4.8	0.0	0.0	0.0	6.2	0.0
Franz Yard	0.0	0.0	19.9	0.0	0.0	0.0	2.2	0.0	0.0	0.0	22.1	0.0
Aboveground Facilities												
Elkhorn Creek Compressor Station	10.4	8.6	2.2	2.2	0.0	0.0	0.5	0.1	0.0	0.0	13.1	10.9
Northern Border Interconnect	1.2	0.8	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	4.2	3.3
Cherry Creek Block Valve	0.6	0.6	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7
Access Roads	4.5	0.6	5.9	1.2	0.0	0.0	1.5	0.2	0.0	0.0	11.9	2.0
Subtotal	289.2	133.0	237.9	105.7	1.1	0.6	30.8	4.8	2.1	2.1	561.1	246.2
Mountrail												
Pipeline Facilities												
Line Section 25 Loop	23.0	15.3	9.4	6.2	0.0	0.0	0.9	0.6	0.0	0.0	33.3	22.1
ATWS												
Line Section 25 Loop	2.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0
Aboveground Facilities												
Robinson Lake Plant Receipt Station	1.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.6
Valve No. 6.8	<0.1	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1
Staging Areas												
Enget Yard	0.0	0.0	39.3	0.0	0.0	0.0	0.1	0.0	0.4	0.0	39.8	0.0
Access Roads	1.7	0.1	1.9	0.0	0.0	0.0	0.5	0.1	0.0	0.0	4.1	0.2
Subtotal	28.9	16.1	51.3	6.2	0.0	0.0	1.5	0.7	0.4	0.0	82.1	23.0

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TABLE 8.2-1												
North Bakken Expansion Project												
Land Uses Affected by Construction and Operation of the Project (in acres) ^a												
Facility/County/Workspace	Agricultural		Open Land		Forest		Developed		Open Water		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Williams												
Pipeline Facilities												
Tioga-Elkhorn Creek	233.6	117.9	38.9	19.5	0.0	0.0	5.6	3.2	12.8	12.7	290.9	153.3
Line Section 25 Loop	35.5	23.5	23.8	16.1	0.0	0.0	1.3	0.9	0.0	0.0	60.6	40.5
Line Section 30 Loop	71.9	48.0	12.4	8.3	0.0	0.0	2.4	1.5	0.1	0.0	86.8	57.8
Tioga Compressor Lateral	1.5	1.0	1.6	1.2	0.0	0.0	0.8	0.6	0.0	0.0	3.9	2.8
ATWS												
Tioga-Elkhorn Creek	40.7	0.0	4.4	0.0	0.0	0.0	1.7	0.0	0.0	0.0	46.8	0.0
Line Section 25 Loop	5.5	0.0	3.9	0.0	0.0	0.0	0.2	0.0	0.0	0.0	9.6	0.0
Line Section 30 Loop	8.3	0.0	1.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	10.1	0.0
Tioga Compressor Lateral	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Staging Areas												
Weflen Staging Yard	17.2	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	17.7	0.0
68th Street Yard	14.2	0.0	5.6	0.0	0.0	0.0	0.1	0.0	0.5	0.0	20.4	0.0
CRS Yard	9.8	0.0	13.0	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	22.8	0.0
Lobell Yard	5.8	0.0	0.0	0.0	0.0	0.0	33.7	0.0	0.0	0.0	39.5	0.0
Schmidt Yard	7.8	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	8.4	0.0
Aux Stable Staging Yard	39.5	0.0	2.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	46.2	0.0
Aboveground Facilities												
Tioga Compressor Station	0.0	0.0	7.5	4.4	0.0	0.0	0.5	0.0	0.1	<0.1	8.1	4.4
Tioga Plant Receipt Station	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1
Springbrook Plant Receipt Station	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4
104th Ave N.W. Pig Launcher	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2

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TABLE 8.2-1

**North Bakken Expansion Project
Land Uses Affected by Construction and Operation of the Project (in acres) ^a**

Facility/County/Workspace	Agricultural		Open Land		Forest		Developed		Open Water		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Access Roads	12.3	0.1	4.8	0.0	0.0	0.0	4.4	0.2	0.0	0.0	21.5	0.3
Subtotal	505.9	192.1	119.4	49.5	0.0	0.0	57.3	6.4	13.3	12.7	696.1	260.8
SUBTOTALS BY FACILITY TYPE												
Pipeline Facilities	672.0	369.7	294.4	169.5	1.1	0.6	22.8	13.4	15.0	14.9	1,005.3	568.1
ATWS	81.1	0.0	40.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	127.0	0.0
Staging Areas	111.8	0.0	87.5	0.0	0.0	0.0	57.7	0.0	0.9	0.0	257.8	0.0
Aboveground Facilities	15.8	12.3	15.5	10.9	0.0	0.0	2.1	0.9	0.1	<0.1	33.4	24.1
Access Roads	23.6	0.9	14.7	1.2	0.0	0.0	7.8	0.5	0.0	0.0	46.0	2.6
PROJECT TOTAL	904.3	382.9	452.1	181.6	1.1	0.6	96.2	14.8	15.9	14.9	1,469.5	594.9

^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.

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As shown in table 8.2-1, the construction right-of-way for the proposed pipelines will require approximately 1,005.3 acres of land, including approximately 672.0 acres of agricultural land (67 percent), 294.4 acres of open land (29 percent), 1.1 acres of forested land (less than 1 percent), 22.8 acres of developed land (2 percent), and 15.0 acres of open water (1 percent). Following construction, approximately 437.1 acres of temporary construction right-of-way will revert to preconstruction condition and use. The remainder, about 568.1 acres, will be encumbered as permanent easement, including approximately 369.7 acres of agricultural land (65 percent), 169.5 acres of open land (30 percent), 0.6 acre of forested land (less than 1 percent), 13.4 acres of developed land (2 percent), and 14.9 acres of open water (3 percent). The majority of the open water acres presented above are associated with the proposed horizontal directional drill (HDD) crossing of Lake Sakakawea and a natural pond, and a permanent right-of-way will not be maintained at this crossing.

While routing the proposed pipelines, WBI Energy sought opportunities to collocate the pipelines with existing linear corridors (pipelines, utilities, and roads) to minimize impacts on the environment. The proposed pipelines will be collocated along 43.8 miles of the route or 47 percent. More information, including a summary table of collocated facilities, can be found in appendix 1D of Resource Report 1.

8.2.2 Additional Temporary Workspace

ATWS outside of the 75- and 100-foot-wide construction rights-of-way will be required for certain road crossings, points of inflection along the route, areas where special construction methods will be implemented (e.g., the HDD or guided bore method), and areas where additional space is needed for storage of stripped topsoil. The ATWS locations are provided in appendix 8A and depicted on the route maps provided in appendices 1A and 1B of Resource Report 1.

In total, approximately 127.0 acres of land will be required for ATWS during Project construction, including 81.1 acres of agricultural land (64 percent), 40.0 acres of open land (31 percent), and 5.9 acres of developed land (5 percent). Impacts on ATWS will be temporary. Following construction, all ATWS areas will be restored to their preconstruction conditions and uses; therefore, no permanent impacts on land use will result from the use of ATWS areas.

8.2.3 Staging Areas

WBI Energy has proposed 12 staging areas for office trailers, parking, vehicle maintenance, and storage of pipe and equipment during Project construction. Locations of the staging areas are depicted on the Project route maps provided as appendices 1A and 1B of Resource Report 1. As shown in table 8.2-1, the staging areas collectively encompass about 257.8 acres of land, consisting of 111.8 acres of agricultural lands (43 percent), 87.5 acres of open land (34 percent), 57.5 acres of developed land (22 percent), and 0.9 acre of open water (less than 1 percent).

Preparation of the staging areas will consist of minor grading and leveling; however, these impacts will be temporary. Once construction is completed, the land within the staging areas will be restored to preconstruction conditions, and returned to preconstruction land uses in accordance with landowner agreements. There will be no permanent impacts on these sites.

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8.2.4 Access Roads

WBI Energy will use existing public and private access roads on a temporary basis to transport personnel, equipment vehicles, and materials to the proposed Project work areas during construction. Standard-maintenance public roads will be used for access without modification or improvement. Some minimum maintenance public roads and private roads, may require improvements (such as grading, blading, and placement of gravel for stability) to safely accommodate Project equipment and vehicles. Locations of access roads are depicted on the Project route maps provided as appendices 1A and 1B of Resource Report 1, and a list of these access roads is provided in appendix 8B.

Temporary access road land uses based on the MRLC Consortium national land cover data comprise a mixture of agricultural lands, open lands, and developed land. Aside from the 2.6 acres required for the 10 proposed permanent access roads, all access roads will be restored to pre-existing condition or better. As a result, the Project will have minor impacts on these areas.

8.2.5 Aboveground Facilities

WBI Energy proposes to construct and operate a new compressor station, the Elkhorn Creek Compressor Station at MP 62.8 of the Tioga-Elkhorn Creek pipeline. Construction of the compressor station will require approximately 13.1 acres of land, consisting of a mixture of agricultural, open, and developed land. Of these 13.1 acres, 10.9 acres will be retained for use during Project operation resulting in the conversion of 8.6 acres of agricultural land and 2.2 acres of open land to developed land. As part of the Project, WBI Energy will modify its Tioga Compressor Station at MP 0.0 of the Tioga-Elkhorn Creek pipeline, which will affect about 8.0 acres of land during construction (7.5 acres of open land, 0.5 acre of developed land, and less than 0.1 acre of open water) and 4.4 acres of open land during operation. All 4.4 acres is within WBI Energy's Tioga Compressor Station owned property boundaries; however, 2.2 acres are outside of the existing chain linked fenced facility. The fence will be extended to encompass the compressor station expansion.

The Project will also require construction of new and/or modifications to existing delivery, receipt, and transfer stations, including the Tioga Plant Receipt Station, Lignite Plant Receipt Station and Lignite Town Border Station, Robinson Lake Plant Receipt Station, Springbrook Plant Receipt Station, Northern Border Interconnect, Norse Plant Receipt Station, and the Norse Transfer Station. Additionally, three block valves and one pig launcher/receiver will extend outside of the permanent right-of-way. Together these facilities will affect 33.4 acres of land during construction (15.8 acres agricultural land, 15.5 acres open land, 2.1 acres developed land, and 0.1 acre open water) and 24.1 acres during operation (12.3 acres agricultural land, 10.9 acres open land, 0.9 acre developed land, and less than 0.1 acre open water).

8.3 Land Use Impacts and Mitigation

Project construction is expected to result in the disturbance of approximately 1,469.5 acres of land, including approximately 1,005.3 acres for pipeline construction rights-of-way, 127.0 acres for ATWS, 257.8 acres for staging areas, 46.0 acres for temporary and permanent access roads, and 33.4 acres for aboveground facility sites. Following construction, approximately 874.6 acres, including the temporary portion of the construction right-of-way, the ATWS, the staging areas, and temporary access roads, will revert to preconstruction land uses. Operation of the Project is anticipated to result in the permanent

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encumbrance of approximately 594.9 acres of land, including 568.1 acres of permanent pipeline easements, 2.6 acres for permanent access roads, and 24.1 acres for aboveground facility sites.

Operation of the proposed aboveground facilities will permanently convert the land use at these sites to developed (i.e., commercial/industrial) land. Impacts on most of the land uses crossed by the pipelines, however, will be temporary and short term because land uses such as agricultural land and open land will be restored to pre-existing conditions after construction is complete (with certain restrictions, such as no building of structures within the permanent easement).

After construction, or before leaving a work area, construction personnel will be required to clean up surplus materials and debris that remain on the site. Areas affected by construction will be restored, revegetated, and monitored in accordance with the Federal Energy Regulatory Commission's (FERC or Commission) *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures)*. Copies of WBI Energy's plans are provided in appendix 1F of Resource Report 1. The following sections discuss potential impacts by land use category.

8.3.1 Agricultural Lands

Agricultural lands in the Project area consist of cultivated fields, working areas within farms, and adjacent hedgerows. Construction of the proposed Project will affect approximately 904.3 acres of agricultural land, including lands within the temporary and permanent rights-of-way (672.0 acres), ATWS (81.1 acres), staging areas (111.8 acres), access roads (23.6 acres), and aboveground facilities (15.8 acres). To date, no irrigation or drainage structures have been identified along the proposed pipeline routes; however, if any drainage structures or irrigation facilities are identified and damaged by construction, WBI Energy will restore these structures and facilities to preconstruction condition as stipulated in the Plan or in accordance with landowner agreements.

Following construction, all agricultural land associated with the Project pipeline rights-of-way, ATWS, and staging areas will be restored to preconstruction condition and allowed to revert to preconstruction use. While about 369.7 acres of agricultural land will be within the permanent pipeline rights-of-way, continued use of the land for agriculture will be allowed. The proposed pipelines will be installed with a minimum depth of 48 inches to allow for continued agricultural use. WBI Energy will remove the entire topsoil layer from the pipeline corridor and maintain proper topsoil and subsoil segregation in accordance with the FERC Plan. Agreements will be made with individual landowners to provide compensation for crop damages or losses caused by Project construction.

Construction and operation of the proposed aboveground facilities will permanently convert a combined 12.3 acres of agricultural land to developed land. Approximately 23.6 acres of agricultural land will be affected by construction of temporary and permanent access roads. Of these, 0.9 acre will be permanently converted to developed land. WBI Energy will restore the temporary access roads to pre-existing condition or better and in accordance with landowner agreements. Use of temporary access roads is not anticipated to result in permanent impacts on agricultural lands.

8.3.1.1 Prime Farmland – No edits

8.3.1.2 Agricultural Drain Tiles – No edits

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8.3.2 Open Land

Open land in the Project area consists of non-forested areas such as grassland and shrubland, isolated stands of trees, emergent wetlands, and shrub/scrub wetlands and is the major non-agricultural land use type affected by the proposed Project. Project construction will affect approximately 452.1 acres of open land, including lands within the temporary and permanent rights-of-way (294.4 acres), ATWS (40.0 acres), staging areas (87.5 acres), access roads (14.7 acres), and aboveground facilities (15.5 acres). Following construction, the temporary pipeline rights-of-way, ATWS, staging areas, and temporary access roads will be restored to preconstruction condition and allowed to revert to preconstruction use.

Approximately 169.5 acres of open land will be within the permanent pipeline easements; however, it will be restored to preconstruction condition and allowed to revert to preconstruction use. Impacts on open land will be minimized through implementation of construction and restoration methods identified in the FERC Plan and Procedures. No long-term impacts are expected on open land, though pipeline maintenance practices will periodically remove woody shrubs from within the permanent right-of-way. Additionally, WBI Energy will ensure topsoil and subsoil remain segregated throughout the construction process. Any vegetated areas that are disrupted will be reseeded and restored with native vegetation and vegetation similar to what is existing in the area. WBI Energy will consult with landowners and local soil conservation specialists regarding recommended seeding methods, rates, and timing. Per the FERC Plan, restoration success will be monitored until final stabilization and revegetation establishment is reached.

Construction and operation of the proposed aboveground facilities will permanently convert a combined 10.9 acres of open land to developed land. Approximately 14.7 acres of open land will be affected by construction of temporary and permanent access roads, 1.2 acres of which will be permanently converted to developed land for operation of permanent access roads. WBI Energy will restore the temporary access roads to pre-existing condition or better and in accordance with landowner agreements. Use of temporary access roads is not anticipated to result in permanent impacts on open lands.

8.3.3 Forested Land

The forested land use category includes wooded upland, hedgerows, and tree stands near wetlands. Construction of the Project will affect approximately 1.1 acres of forested land, all of which is within the temporary and permanent right-of-way. Once construction is complete, approximately 0.6 acre of the forested land will be retained as open land within the new permanent right-of-way. No forested lands are located within the ATWS, staging areas, access roads, or aboveground facilities.

Construction in forested areas along the pipeline rights-of-way will require the removal of trees to prepare the construction workspace. Following construction, trees and shrubs in the temporary construction right-of-way will be allowed to revegetate. Forested land within the 50-foot-wide permanent right-of-way will be permanently affected as a result of the maintenance activities as described in the FERC Plan and Procedures.

8.3.4 Developed Land

Developed land affected by the Project primarily consists of existing roads and utility lines crossed by the pipeline rights-of-way. Construction of the proposed Project will affect approximately 96.2 acres of developed land including lands within the temporary and permanent rights-of-way (22.8 acres), ATWS (5.9

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acres), staging areas (57.7 acres), access roads (7.8 acres), and aboveground facilities (2.1 acres). Operational impacts will include 14.8 acres required for the permanent pipeline rights-of-way (13.4 acres), permanent access roads (0.5 acre), and aboveground facilities (0.9 acre).

Construction across roads and utility corridors will be conducted in accordance with the FERC Plan and applicable crossing permits and approvals. Existing transmission line corridors will be crossed by methods agreed upon with the facility operators. As described in Resource Report 1, most paved roads and highways will be crossed by conventional subsurface boring, which will minimize direct impacts on these features as well as impacts on traffic. Unpaved roads, two-tracks, and driveways, as well as roads in areas with a high water table, will be crossed using the open-cut method and then restored to preconstruction condition. WBI Energy will implement traffic control measures to minimize impacts on traffic within major roadways and assist with transportation of construction equipment and materials. Impacts resulting from slow-moving construction vehicles and road closures will be short term and will occur mostly during daylight hours. WBI Energy will use the guided bore method for most road crossings to minimize the impacts to vehicle traffic. Where required by the landowner, a temporary bridge or bypass may be established on small roads or driveways. Impacts on the existing transportation system are anticipated to be temporary and minimal. The pipeline routes are located in areas that are primarily rural and do not experience heavy traffic volumes.

Operation and maintenance of the proposed Project facilities will not affect traffic flow on any of the roads or highways in the Project area. Required periodic maintenance and inspection procedures along the pipeline routes will involve a low frequency of light vehicle movement on and off roadways; therefore, no impacts are expected.

8.3.5 Open Water

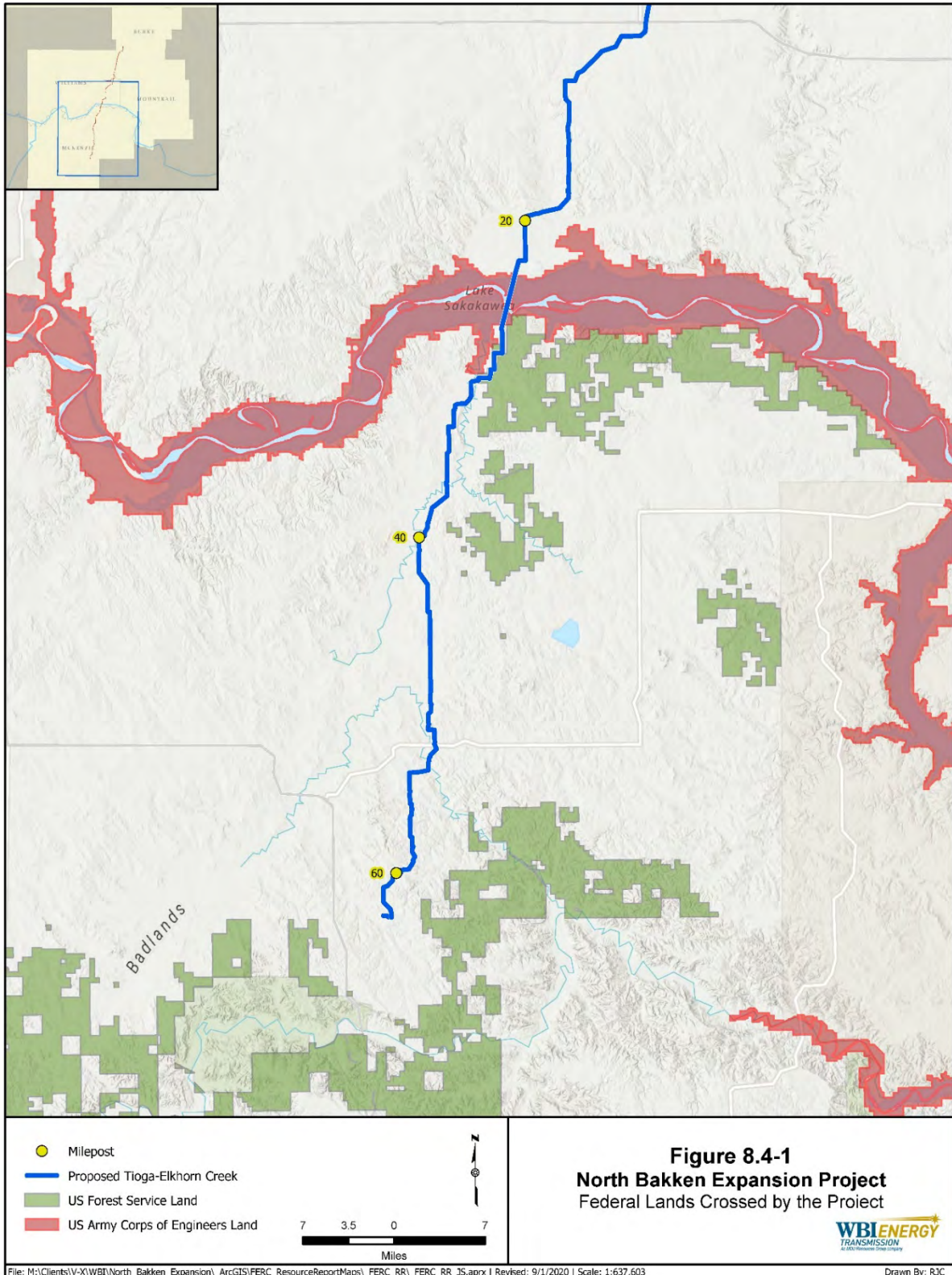
Open water in the Project area consists of lakes, prairie pothole wetlands, and smaller creeks. Lake Sakakawea is the largest body of open water in the Project area. Construction of the proposed Project will affect approximately 15.9 acres of open water. The vast majority of the open water (14.9 acres) is within the HDD path for the proposed crossing of Lake Sakakawea. The remaining 1.0 acre of open water includes smaller waterbody crossings along the Tioga-Elkhorn Creek, Line Section 25 Loop, and Line Section 30 Loop pipelines and manmade ponds located in the Enget and 68th Street Yards and the Tioga Compressor Station. Because WBI Energy proposes to cross Lake Sakakawea and a natural pond via the HDD method, minimal impacts on the open water land use classification are expected to occur from construction or operation of the Project. See Resource Report 2 for additional information on waterbody crossings.

8.4 Land Ownership

The Project crosses a combined amount of 1.1 miles of state lands, 4.8 miles of federal lands, and 88.1 miles of lands that are privately held. All federal lands crossed are along the Tioga-Elkhorn Creek pipeline (see figure 8.4-1). The pipeline crosses U.S Army Corps of Engineers (COE) land between MPs 23.1 and 25.8 and USFS land between MPs 27.3 and 27.7 and MPs 28.2 and 29.9. More information on these crossings can be found in section 8.10. The Line Section 25 Loop crosses state lands between MPs 4.1 and 5.2 and MPs 14.7 and 14.8. The remainder of the proposed routes cross privately owned lands, including about 3.6 miles of private lands subject to conservation easements held by the FWS. Additionally, all aboveground facilities will be located on privately owned land.

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8.5 Existing Residences and Planned Developments

The Project does not cross any residential areas or pass within 50 feet of any residences or other existing structures. WBI Energy preferentially routed the pipeline facilities to avoid residences. The route passes within 500 feet of residences in 11 locations near:

- Tioga-Elkhorn Creek pipeline at MPs 22.5, 23.1, 28.2, 30.0, 30.5, and 39.2;
- Line Section 25 Loop at MPs 8.0, 10.9, 11.5, and 19.3; and
- Line Section 30 Loop at MP 5.1.

In all instances, the pipelines will be greater than 350 feet from the nearest farmstead or residence. Should changes in the Project design require construction in residential areas or within 50 feet of a residence or existing structure, WBI Energy will comply with FERC's regulations and file the necessary information for these areas.

As shown in appendix II, WBI Energy received scoping comments on maintaining access to a landowner's property during construction and repairing fences and gates damaged during construction. WBI Energy will work with individual landowners on an as-needed basis to work out any potential issues with property access and potential damage to gates and fences.

Additionally, comments were received about eminent domain, compensation for acquisition of a right-of-way, and right-of-way easement lease terms. WBI Energy does not currently have recourse to eminent domain to obtain an easement for the Project. Under section 7(h) of the Natural Gas Act, WBI Energy will obtain the right to eminent domain if FERC issues a Certificate of Public Convenience and Necessity for the Project. Regardless, WBI Energy will attempt to negotiate an easement agreement with each landowner along the proposed pipeline route.

With regard to compensation, WBI Energy will negotiate with affected landowners in good faith and in a fair and honest manner to obtain an easement to construct, operate, and maintain the proposed pipeline in return for monetary compensation. Compensation for easements will be based on fair market value and will be paid on a one-time, lump-sum basis. With regards to easement terms, WBI Energy will follow the requirements in the North Dakota Century Code T47C05.

Planned developments are those that are permitted and not yet constructed, or developments for which permit applications have been filed but not yet approved by a zoning or permitting authority. WBI Energy consulted with the Williams, Mountrail, McKenzie, and Burke County Planning and Zoning Offices as well as the planning and zoning offices for Tioga and Watford City. Based on this research, no planned residential or commercial developments are proposed in the Project area; therefore, the Project will have no impacts on planned residential or commercial developments.

There are two planned industrial/energy projects within 0.5 mile of the proposed Project. The Aurora Wind Project will encompass approximately 44,000 acres, and will consist of a maximum of 121 turbines, with a capacity of 300 megawatts. Construction is anticipated to begin in 2019 and the project will be in-service by the end of 2020 (Prairie Public News, 2019; Tradewind Energy, 2019). Additionally, the Gunslinger Federal and Gladstone Oil and Gas Well Pads projects will include the installation of 10 and 7 wells,

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respectively. These projects will include the construction of new access roads as well as associated oil and gas equipment and utilities. The Aurora Wind Project and Gunslinger Federal and Gladstone Oil and Gas Well Pads projects are included in the cumulative impact analysis for each resource including land use (section 8.14).

8.6 Landfills And Hazardous Waste Sites

WBI Energy reviewed the U.S. Environmental Protection Agency’s (EPA) EnviroFacts Website as well as an 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 pipeline routes (EPA, 2019a and 2019b). Table 8.6-1 lists the hazardous waste sites identified during this search. No landfills were identified within 0.25 mile of the pipeline routes.

WBI Energy will minimize the potential impact of spills of hazardous materials during construction by adhering to its *Spill Prevention, Control, and Countermeasure Plan* (see appendix 1F of Resource Report 1). The *Spill Prevention, Control, and Countermeasure Plan* describes preventative measures such as personnel training, equipment inspection, and refueling procedures to reduce the likelihood of spills, as well as mitigation measures such as containment and cleanup to minimize potential impacts should a spill occur.

8.9 Recreation and Special Interest Areas

WBI Energy reviewed a variety of digital datasets and maps to identify recreation and special interest areas within or in the immediate vicinity (i.e., within 0.25 mile) of the Project area (America’s Scenic Byways, 2019; National Park Service, 2019; National Wild and Scenic Rivers System, 2019; North Dakota Game and Fish Department [NDGFD], 2019a; North Dakota Parks and Recreation, 2019a). Based on this review, the proposed pipelines will not cross or pass near any wild and scenic rivers, national or state scenic byways, wildlife management areas, old growth forests, designated scenic areas, nature/forest preserves, state, county, or local parks, campgrounds, or natural landmarks. Therefore, the Project will have no impact on these types of recreation or special interest areas. Recreational opportunities present in the Project area and the potential impacts on those recreational opportunities are discussed in the paragraphs below.

The Private Land Open to Sportsmen (PLOTS) program identifies lands open to hunting due to agreements between the NDGFD and private landowners. The PLOTS program also identifies public lands, wildlife management areas, and waterfowl production areas open to hunting. These lands provide walk-in public access only, defined as, “an individual traveling by foot with any legal firearm or bow, plus other equipment, accessories and provisions for the purposes of hunting” (NDGFD, 2019b). These lands do not allow activities such as horseback riding, placing bait, driving all-terrain vehicles or snowmobiles, or dog training, among other activities, without written permission from the landowner (NDGFD, 2019b). The proposed Project crosses one section of PLOTS land near MP 0.3 of the Line Section 30 Loop and will run parallel to one PLOTS parcel near MPs 10.8 of the Tioga-Elkhorn Creek pipeline. In total, the Project will affect 2.3 acres of PLOTS lands. The PLOTS lands change often and WBI Energy will continue to monitor to see if any additional lands are crossed between now and construction. Construction of the proposed pipeline facilities is scheduled to begin in spring of 2021 and will overlap with hunting season in the Project area. However, due to the small amount of PLOTS lands crossed, any potential impacts on PLOTS lands will be minor and temporary.

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TABLE 8.6-1						
North Bakken Expansion Project Hazardous Waste Sites Within 0.25 Mile of the Project						
Facility Site	Location	Approximate Distance to Project (miles)	Direction from Project to Site	Media Affected	Substance of Concern	Status of Remediation
Andeavor High Plains Company LLC Tioga Station	10318 68th Street NW Tioga, ND 58852	0.1	Southeast	N/A	N/A	N/A
Former "The Attic" Building	302 Elm St. NE Tioga, ND 58852	0.2	North	N/A	N/A	N/A
Triple Aggregate LLC – White Earth Pit	1027 S Welo St Tioga, ND 58852	0.1	North	N/A	N/A	N/A
Tioga Gas Processing Plant	10340 68th Street Northwest	0.1	Southeast	N/A	N/A	N/A
Tioga Airport Authority – Tioga Municipal Airport	67th St. NW Tioga, ND 58852	<0.1	North	N/A	N/A	N/A
Hess Corporation – Tioga Gas Plant Lab	10340 68th Street North West Tioga, ND 58852	0.1	Southeast	Surface Water	Effluent	Complete
Hess Corporation	Remote Location Unknown, ND 58000	<0.1	North	N/A	N/A	N/A
Lignite Gas Plant	10050 84th Avenue Lignite, ND 58752	<0.1 50 feet	South	Soil	Brackish Water	In Progress
Lignite Gas Plant	10050 84th Avenue Lignite, ND 58752	<0.1 50 feet	South	Soil	Condensate	In Progress
Slawson Exploration Company, Inc. – Gunslinger 327 Right of Way	48.08890, - 103.10250	<0.1 85 feet	West	Soil	Bentonite Clay and Water	Complete
Area Adjacent to WBI Energy Pipeline Access Road	47.80530, - 103.16470	0.3	East	Soil	Hydraulic Fluid	Complete
OXY USA, Inc. – Storage Tank	10050 84th Avenue Lignite, ND 58752	<0.1 50 feet	North	N/A	N/A	N/A
Balsam, Inc. – Northern Tank Line Terminal	48.401767, - 102.91635	<0.1 175 feet	South	N/A	N/A	N/A
Oasis-Johnson 16-34H	47.7616934, - 103.201131	0.1	West	N/A	N/A	N/A

^a EPA 2019a, NDDEQ, 2020
Notes: N/A = Not applicable

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As discussed in section 2.2.1 of Resource Report 2, recreation is one of the congressionally authorized purposes of the COE Garrison Project. Recreational use of Garrison Project lands is encouraged through the availability of public parks, and recreational facilities and the Garrison Project is managed to provide a diverse and high quality outdoor recreation experience. Planning for the development and use of recreation facilities is coordinated with Tribal, state, county, municipal, and local non-government entities who lease and manage most of the higher use recreation sites on Lake Sakakawea (COE, 2007). WBI Energy proposes to cross Lake Sakakawea via the HDD method (see Resource Report 2 for additional information). Lake Sakakawea is a reservoir on the Missouri River and is about 368,000 acres in size. The land crossed by the proposed Project does not have public access to the COE land or the lake; all access is private. Therefore, Project construction will not have a direct impact on recreational opportunities on Lake Sakakawea. The lake crossing will occur approximately 1.3 miles from Tobacco Garden Bay, which has a restaurant, convenience store, bait and tackle shop, as well as 100 campsites, two log cabins, and picnic shelters. This area also provides access to the Birnt Hills Trail and a boat launch located on the north side of this site, which is one of the main access points to recreate on the river (North Dakota Tourism, 2019). Temporary impacts on recreational opportunities on Lake Sakakawea would be limited to noise, visual, and traffic impacts during HDD construction.

Due to the length of the proposed HDD crossing of Lake Sakakawea, land will be required on the north side of the lake for the temporary pipeline pullback area. The pipe pullback will extend approximately 2.8 miles north across agricultural land. There is potential for temporary traffic impacts on 51st Street N.W. near MP 22.4 of the Tioga-Elkhorn Creek pipeline as the pipe string will be elevated across the road. There are three recreation areas (Links of North Dakota Golf Course, Lund's Landing, and 3 D's Campground) accessed using 51st Street N.W. While the proposed Project will not have any direct impacts on these recreation areas, visitors could experience temporary traffic delays while attempting to access the sites during the pipe pullback operation. The pullback is anticipated to take between 24 and 36 hours to complete. If a road closure is necessary, WBI Energy will work with local law enforcement and county agencies to ensure that impacts on local traffic are minimized. Construction vehicles and equipment will comply with all federal, state, and county regulations as well as local load weight restrictions.

The proposed Tioga-Elkhorn Creek pipeline crosses the Little Missouri National Grassland (LMNG), a part of the Dakota Prairie Grasslands, in the northeast unit of the McKenzie Ranger District for approximately 2.1 miles between MPs 27.3 and 27.7 and MPs 28.2 and 29.9. The USFS-managed LMNG encompasses 1,033,271 acres of land and is the largest grassland in the United States (USFS, 2019a). The LMNG is considered a mixed grass prairie and offers a variety of recreational opportunities including mountain biking, backpacking/camping, fishing, horseback riding, and small game hunting. There are also opportunities for outdoor learning through interpretive signs and picnicking. Additionally, some of the land within the grassland is leased to ranchers for cattle grazing. The portion of the LMNG crossed by the proposed Project does not contain any designated recreation areas or trails and is classified as having a low Scenic Integrity Objective in the LMNG. The proposed Tioga-Elkhorn Creek pipeline will cross one dirt two track USFS road (at MP 27.3) and one paved/graveled USFS road (MP 29.9) which is 115th Ave NW and primarily managed by McKenzie County. WBI Energy is consulting with the USFS regarding the appropriate permitting and mitigation for these crossings; however, impacts on recreational opportunities within the LMNG are not anticipated.

Temporary construction activities may have an impact on recreational activities due to traffic, visual impacts, and noise associated with construction; however, these impacts will be local, short term, and temporary as construction activities proceed through any given area, including activities near Lake

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Sakakawea, where the HDD is anticipated to take approximately 6 months to complete. Therefore, the Project is not expected to have a significant impact on recreation and special interest areas.

8.10 Federal Land Management Plans

8.10.2 U.S. Forest Service

The Project's crossing at the USFS Dakota Prairie Grasslands, LMNG is situated within the northeast unit of the McKenzie Ranger District. This portion of the LMNG contains existing oil and gas development and the USFS will determine if the proposed crossing conforms to the Land and Resource Management Plan for the DPG Northern Region (LRMP) dated 2001. The LRMP provides specific Standards and Guidelines that the Project must meet before issuing a Special Use Permit to cross National Forest System land. As discussed in section 8.2.1, the proposed pipeline construction right-of-way will be 50 feet wide across USFS land with an additional 25 feet of temporary workspace along the full length of the USFS land crossing. At guided bore crossings on USFS land, additional ATWS outside of these areas will be required for the bore equipment. WBI Energy is continuing to work with the USFS to refine any additional stipulations that may be required on their land. Copies of correspondence with the USFS can be found in appendix 1G of Resource Report 1.

8.14 Cumulative Impacts

8.14.2 Recreation and Special Interest Areas

The proposed Tioga-Elkhorn Creek pipeline will cross Lake Sakakawea near Tobacco Garden Bay. Impacts of the 2.5-mile crossing on recreation will be mitigated by using the HDD crossing method. WBI Energy is consulting with the USFS regarding the appropriate permitting and mitigation for the 2.1-mile-long crossing of the LMNG. As discussed above, the Gunslinger Federal and Gladstone Oil and Gas Well Pads project is collocated and/or overlapping with the proposed Project across the LMNG. There are no designated recreation areas within this portion of the LMNG; therefore, cumulative impacts on recreation are not expected.

The proposed Cenex pipeline project would temporarily disturb approximately 22.0 acres of NDGFD PLOTS land and 120 acres of FWS wetland easements. Permanent impacts are not anticipated. With implementation of the proposed mitigation measures described above, significant cumulative impacts of the Project when combined with the Cenex pipeline project are not anticipated.

8.15 New or Updated References

North Dakota Department of Environmental Equality. 2020. Spill Investigation Program, Environmental Incident Reports. Available online at https://deq.nd.gov/wq/4_spill_investigations/reports.aspx. Accessed August 2020.

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9.0 UPDATES TO RESOURCE REPORT 9 – AIR QUALITY AND NOISE

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

9.2.4 Construction Noise Impacts

The principal noise sources associated with construction of the Project will be operation of heavy equipment (e.g., bulldozers, backhoes, cranes, rollers, and trucks). As referenced in table 9.2.4-1²⁶ below, noise from the heavy equipment typically ranges from 55 to 85 dBA at a distance of 50 feet from the source. Noise will be intermittent during most of the 8-month construction period and will occasionally exceed background noise levels that currently characterize the area. The majority of construction activities will take place during the day (7:00 a.m. to 7:00 p.m.) and will not have an impact on nighttime sounds levels; however, nighttime construction activities outlined in section 1.2 of Resource Report 1, may be carried out 24 hours a day until completed.

Noise associated with construction of the pipeline facilities will be short term and temporary at any given location because of the assembly-line method of pipeline installation. While the noise levels attributable to construction equipment could noticeably increase ambient noise levels at the NSAs nearest the workspace, this noise will be temporary and localized. With the exception nighttime construction activities outlined in section 1.2 of Resource Report 1, construction activities will be limited to daytime hours. Therefore, most construction noise will not have impacts on residents near the pipeline corridor between the hours of 7:00 pm and 7:00 am. Additionally, due to the temporary nature of these activities, no associated long-term impacts on noise levels are anticipated.

WBI Energy proposes to cross Lake Sakakawea via the HDD intersect method, in which drilling will occur from both ends of the crossing and intersect near the middle of the lake. Noise associated with HDD entry site construction is typically greater than noise associated with HDD exit site operations. Because drilling will occur from both ends of the crossing, both ends are considered entry sites for the purposes of the noise impact analysis.

Construction activities at the HDD location are expected to occur for 5 months. Operations are expected to occur for 12 to 14 hours per day, 7 days per week, unless site conditions require operation 24 hours per day. Working 24 hours per day will be required during pullback operations, which should not exceed 1 week. Additional nighttime activities may occur as necessary based on site conditions. Therefore, HDD construction may have nighttime impacts on residents near HDD locations.

HDD construction involves various equipment and activities including power generation, mobile equipment, and mixing pumps. The following sound sources are expected to be significant contributors:

- drilling rig and associated engine-driven power unit;
- engine-driven mud pumps and engine-driven generator sets;
- mud mixing and mud cleaning equipment;

²⁶ No edits to this table occurred due to Project changes; therefore, this table is not included in this supplemental filing.

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- crane, sidebooms, backhoe, frontloader, forklift, and/or trucks; and
- engine-driven light plants (used for nighttime operation).

Since the submittal of the February 14, 2020 FERC Application, WBI Energy has contracted with Michels to complete the HDD of Lake Sakakawea. Michels has provided more specific information as to the equipment that will be used during HDD construction. An updated estimate of noise impacts at nearby NSAs is provided in table 9.2.4-2.

TABLE 9.2.4-2						
North Bakken Expansion Project						
Noise Quality Analysis for the Lake Sakakawea Horizontal Directional Drill Crossing						
NSA Name and Location	Distance and Direction of NSA	Calculated Ambient L _{dn} (dBA)	Unmitigated HDD Operations L _{dn} (dBA)	Unmitigated HDD Operations L _{dn} Plus Ambient L _{dn} (dBA)	Mitigated HDD Operations L _{dn} Plus Ambient L _{dn} (dBA)	Potential Increase Above Ambient (dB) with Mitigation
NSA 1 – South Side	2,240 feet southwest	54.7	60.3	61.4	54.8	0.2
NSA 1 – North Side	492 feet southeast	44.7	73.5	73.5	54.6	9.9
NSA 2 – North Side	2,597 feet southeast	48.7	59.0	59.4	49.2	0.5

In an effort to mitigate impacts at nearby NSAs, WBI Energy will require the HDD contractor to install at least a 16-foot Sound Transmission Class 32 barrier within the line of sight of each NSA and all major noise-producing equipment. Additionally, silencers will be required to be used on all generators on both sides of the crossing. Noise reduction associated with a barrier and generator silencers is shown in table 9.2.4-2 above. Although noise levels associated with HDD operations are estimated to be below 55 dBA L_{dn}, due to the proximity of operations to the NSAs and the variable effects site equipment layout can have on noise propagation, WBI Energy will also perform on-site acoustical monitoring during HDD startup to evaluate the actual noise impact on the nearby NSAs and evaluate potential additional noise mitigation measures to reduce the noise impact to below 55 dBA L_{dn}, or 10 dBA over ambient, at the NSAs. WBI Energy will submit an HDD mitigation plan prior to construction to further address procedures and specific mitigation measures to be used in the event that the on-site monitoring determines that the noise impact exceeds the FERC limit criterion. If 24-hour HDD activity is required for more than 1 week, and reducing noise impacts at NSAs to below 55 dBA L_{dn} or 10 dBA over ambient is not feasible, WBI Energy plans to establish a supervised hotline to address landowner complaints regarding increased noise levels, including offers to compensate landowners for temporary relocation if necessary. If actual noise levels are greater than nighttime HDD activity will only occur during the pullback operation, which is estimated to last less than 1 week, temporary relocation, or compensation for relocation, of residents may be a viable option in place of physical mitigation measures.

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10.0 UPDATES TO RESOURCE REPORT 10 – ALTERNATIVES

Note: Only sections, tables, and figures requiring revisions due to Project reroutes/changes are included; sections not affected by these changes are omitted.

10.4 System Alternatives

System alternatives would make use of other existing, modified, or proposed pipeline systems to meet the objectives of the Project. Use of a system alternative would make it unnecessary to construct all or part of the proposed Project, though some modifications or additions to the existing or proposed systems may be required. Such modifications or additions would result in environmental impacts; however, the impacts could be less than, similar to, or greater than those associated with construction of the proposed Project.

North Dakota has a broad network of high-pressure, high-volume, natural gas pipelines operating throughout the state. Of these, WBI Energy identified two existing systems that potentially could meet the objectives of the Project: the Alliance Pipeline (Alliance) and Northern Border (see figure 10.4-1). Each of these existing pipeline systems is described below, followed by a discussion of the potential for these pipelines to serve as system alternatives to the proposed Project. WBI Energy is not aware of any proposed pipeline systems in northwestern North Dakota that could meet the objectives of the Project.

10.4.1 Alliance Pipeline System Alternative

According to its website, the Alliance pipeline system consists of 2,391 miles of integrated Canadian and U.S. natural gas transmission pipelines, delivering liquids rich natural gas from the Western Canadian Sedimentary Basin and the Williston Basin in North Dakota to the Chicago market hub. The U.S. portion of the system consists of approximately 887 miles of 36-inch-diameter pipeline with a maximum operating pressure of 1,935 pounds per square inch. The system has been in commercial service since December 2000 and delivers an average of 1.6 billion standard cubic feet of natural gas per day to the Chicago market.

As an alternative to the proposed Project, WBI Energy examined a connection with Alliance in northcentral North Dakota. This alternative would consist of approximately 124 miles of 24-inch-diameter pipeline from WBI Energy's Tioga Compressor Station traversing east to an interconnect with the Alliance pipeline system near Towner, North Dakota, and construction of a new compressor station near the interconnect. Construction of the proposed Line Section 25 and 30 pipeline loopings, the Tioga Compressor Lateral, and the required additional compression at the Tioga Compressor Station would be required for this alternative. The new compressor station near the Alliance interconnect would be much larger than the proposed Elkhorn Creek Compressor Station (estimated at 6,300 horsepower [hp] higher) due to the higher operating pressure of the Alliance pipeline as well as the additional distance to the Alliance interconnect. Due to the increased costs for the longer pipeline, the additional environmental impacts associated with the longer pipeline, as well as the increased costs for compressor horsepower, associated fuel and operating costs as well as construction and operational environmental impacts, this alternative was not selected.

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10.4.2 Northern Border System Alternative

According to its website, the Northern Border pipeline system, owned by TC Pipelines, LP and ONEOK Partners, is a major natural gas transportation system that links the Midwestern United States with reserves in the Western Canadian Sedimentary Basin and transports natural gas produced in the Williston and Powder River Basins in the United States to the Chicago area (Northern Border, 2019). WBI Energy currently has five interconnects with the Northern Border pipeline system in northwestern and central North Dakota. The system has a total design capacity of about 2.4 billion cubic feet per day. Although the Northern Border Pipeline serves the Chicago market area.

WBI Energy examined constructing a 24-inch-diameter pipeline from the Tioga Compressor Station traversing west to its interconnection with Northern Border west of Williston, North Dakota that would be about 2 miles longer than the proposed Tioga-Elkhorn Creek pipeline. The pipeline would be routed around the north side of Williston, North Dakota and traverse southwest towards WBI Energy's Stateline interconnect with Northern Border. Construction of the proposed Line Section 25 and 30 pipeline looping, the Tioga Compressor Lateral, Northern Border Interconnect, and the required additional compression at the Tioga Compressor Station would be the same as the proposed Project. This alternative has the advantage of avoiding the crossing of Lake Sakakawea; however, the route is slightly longer than the Tioga-Elkhorn Creek pipeline, reduces pipeline collocation opportunities, and increased the length of the pipeline that would be constructed through less heavily oil- and gas-developed areas. Furthermore, the interconnect location is further upstream on Northern Border's system; therefore, customers on Northern Border would incur additional fuel and transportation costs on its system when compared to the Project's proposed tie-in to Northern Border's existing mainline near the proposed Elkhorn Creek Compressor Station. In addition, the town of Williston is considered a hub city within the region. The town's population has tripled over that last 10 years and expanded to provide new housing and infrastructure to meet the demands of a growing city (City of Williston, 2019). This alternative route would be in close proximity to Williston and would increase the likelihood of encroachment. Due to reduced flexibility, encroachment of the town of Williston, and increased fuel and transportation costs, this alternative was not selected.

10.5 Facility Alternatives

Facility alternatives are those alternatives that consider modifications to the proposed Project facilities including varying diameter pipelines, increased compression, and the reduction of proposed pipeline facilities. During Project planning, WBI Energy considered a facility alternative to the proposed Line Section 30 Loop.

The proposed Project includes approximately 9.6 miles of new 12-inch-diameter natural gas pipeline looping between an existing valve setting and WBI Energy's Tioga Compressor Station in order to transport additional volumes as efficiently as possible. The proposed Line Section 30 Loop would also provide increased system security and operational flexibility for the Project. WBI Energy initially considered an alternative to the proposed Line Section 30 Loop that would entail installing additional compression at the Tioga Compressor Station. It would be possible to transport the contracted volumes east to the Tioga Compressor Station with the installation of an additional approximately 4,300 hp at the Tioga Compressor Station. Although this alternative would have reduced Project costs, there would have been increased fuel and operating costs associated with the additional compressor horsepower, the increase in horsepower and fuel would lead to a greater operational environmental impact for the alternative, and the alternative would not increase system security and operational flexibility on WBI Energy's Line Section 30. For these reasons, this alternative was not selected. Additionally, on August 4, 2020, WBI Energy filed an

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amendment to its February 14, 2020 FERC Application to reduce the Project's incremental firm transportation design capacity to 250,000 million cubic feet per day. Based on the Project's reduced transportation design capacity, this facility alternative would be unnecessary.

10.6 Route Alternatives and Route Variations

10.6.1 Major Route Alternatives

WBI Energy evaluated two major route alternatives that would minimize federal lands crossed by the Project. As depicted in figure 10.6.1-1, the Project route crosses both U.S. Army Corps of Engineers (COE) land and U.S. Forest Service (USFS) land. The COE land extends approximately 45 miles west and over 100 miles southeast of the proposed Lake Sakakawea crossing location. Route alternatives to avoid COE lands were deemed impracticable as they would add an additional 90 and 200 miles to the proposed routes, which in turn would add additional environmental constraints including but not limited to additional wetland crossings, waterbody crossings, wetland easements, and vegetation impacts. However, both alternative routes would eliminate USFS land crossed, as depicted in figure 10.6.1-2.

Western Alternative

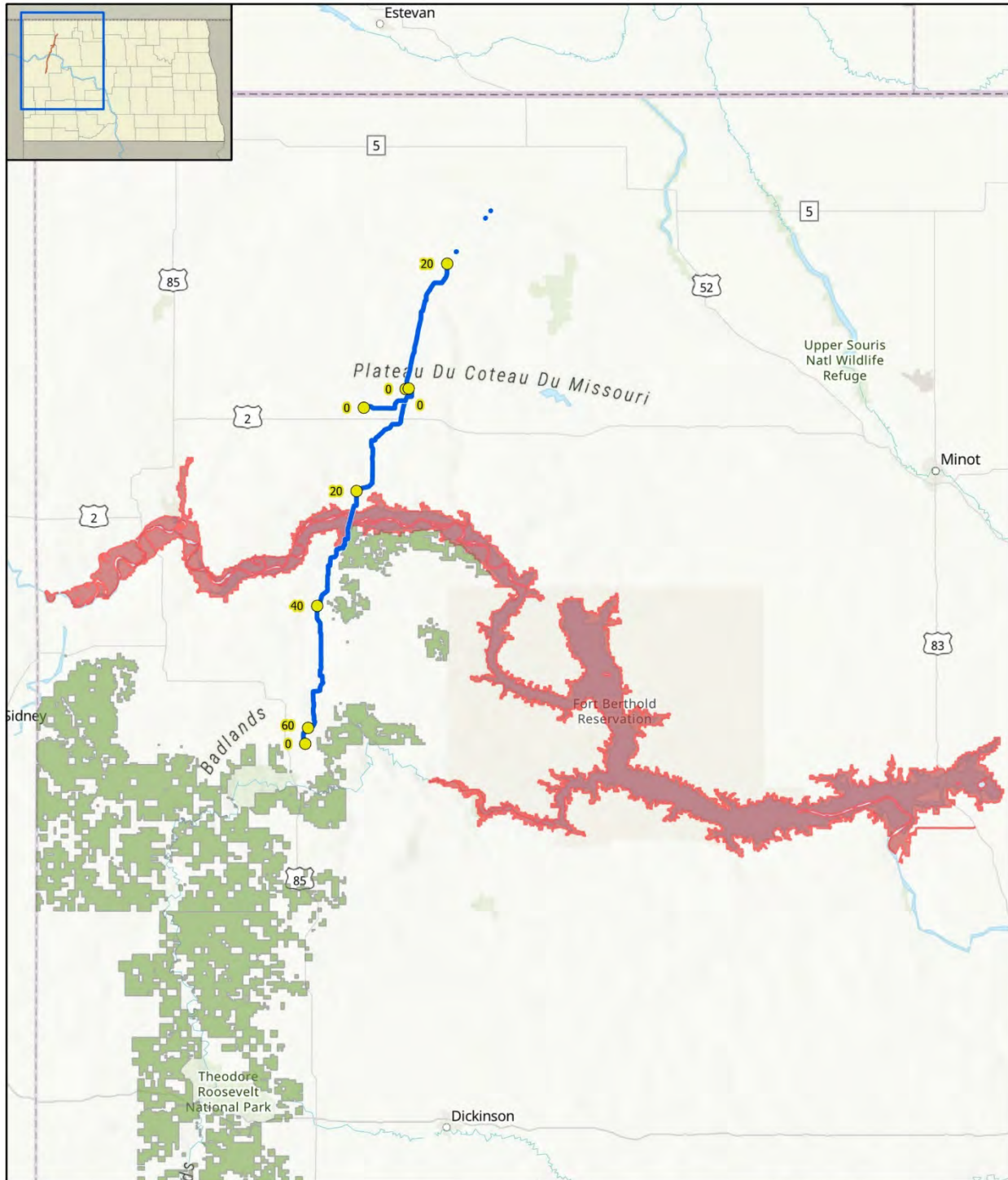
The Western Alternative would extend west from milepost (MP) 22.4 of the Tioga-Elkhorn Creek pipeline, follow the north side of 51st Lane NW until it connects with Highway 1804, and then continues along the north side of Highway 1804 for an additional 2 miles. The alternative route would then head southwest through steep topography along the north side of Lake Sakakawea between existing oil and gas well pad development. The alternative route then crosses Lake Sakakawea following an existing ONEOK Rockies Midstream gathering line through a valley on the south side of the lake. The route then continues south paralleling Highway 1806 west for about 1 mile before turning east and following 45th Street NW for an additional 0.9 mile. At this point, the alternative would rejoin the Tioga-Elkhorn Creek pipeline route near MP 30.8.

The Western Alternative is 12.1 miles in length, compared with the 8.4-mile corresponding segment of the proposed Tioga-Elkhorn Creek pipeline route. In addition to the crossing of Lake Sakakawea, the Western Alternative would cross a total of 3.8 miles of COE-owned land compared with 2.7 miles of the proposed Tioga-Elkhorn Creek pipeline route including COE-owned lands that extend on the north side of Highway 1804 near Lund's Landing Boat Ramp. The Western Alternative would be within 0.25 mile of both Lund's Landing and 3 D's Campground, which would have temporary impacts (visual, noise, traffic) on these existing recreation area during construction.

Review of National Wetlands Inventory data shows that the Western Alternative would cross three additional emergent wetlands compared to the proposed route. Review of National Hydrography Dataset data indicates that the same amount of intermittent and perennial waterbodies would be crossed by the Western Alternative as the proposed segment of the Tioga-Elkhorn Creek pipeline. The crossing of Lake Sakakawea (waterbody itself) would be 2.7 miles compared to 2.4 miles for the proposed route. While a configuration of a horizontal direction drill (HDD) layout was not developed for the Western Alternative, it is anticipated that the drill itself would need to extend north and south of the lake proper, making the drill a minimum of 0.3 mile longer than that of the proposed lake crossing. As previously mentioned, the topography on the north shore of Lake Sakakawea on the Western Alternative is much steeper than that of the proposed route and could potentially require grading for placement of the pipe pullback for the HDD. The south shore of Lake Sakakawea has the potential viability of a pipe pullback area for the Western Alternative; however, only approximately 0.7 mile of contiguous agricultural fields are present versus 2.7 miles on the proposed route. Additional shrub/tree clearing would be required for a pullback on the south shore.

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● Milepost
— Proposed Route
■ US Forest Service Land
■ US Army Corps of Engineers Land

N

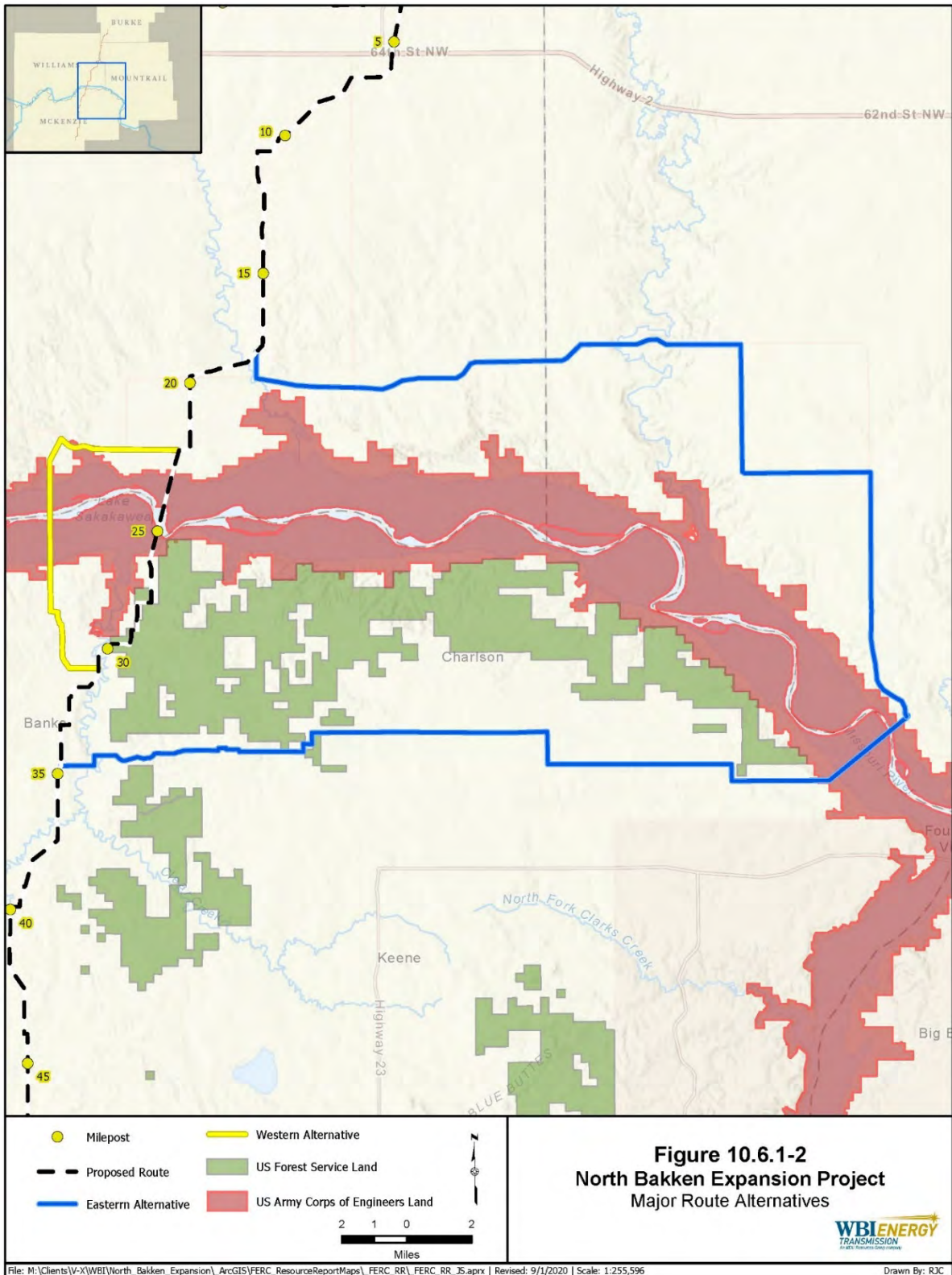
 Miles

Figure 10.6.1-1
North Bakken Expansion Project
 Federal Lands in the Project Area



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While the Western Alternative would avoid the crossing of the USFS Little Missouri National Grassland, it would add approximately 4 miles to the pipeline route, increase the length of COE-lands crossed, be in close proximity to two existing recreation areas, cross additional wetland areas, and require a longer HDD crossing of Lake Sakakawea. For these reasons, the Western Alternative was not selected as a viable route alternative.

Eastern Alternative

The Eastern Alternative would extend south from MP 17.6 of the Tioga-Elkhorn Creek pipeline for approximately 1 mile before heading east following 54th and 55th Streets NW for an additional 16 miles, head south following 96th Avenue NW for about 4 miles and turn east along 51st Street NW for an additional 4 miles. The Eastern Alternative would then head southeast along Highway 1804 for approximately 8 miles before heading southwest across Lake Sakakawea. The alternative would then head west for about 21 miles generally following existing roads where possible and following existing utility rights-of-way for another 5 miles before rejoining the Tioga-Elkhorn Creek pipeline route near MP 34.7.

The Eastern Alternative is approximately 61.8 miles in length, compared with the 17.1 mile corresponding segment of the proposed Tioga-Elkhorn Creek pipeline route. The Eastern Alternative would cross a total of 3.2 miles of COE-owned land compared with 2.7 miles of the proposed route and would avoid crossing of USFS-owned land. While the alternative was routed to follow existing roads for the majority of the route, this does put the alternative in close proximity to various homes and businesses primarily along 54th Street NW, 92nd Avenue NW, 91st Avenue NW, 43rd Avenue NW, and 42nd Avenue NW. While the Eastern Alternative would not extend into the Fort Berthold Indian Reservation, it would be located approximately 2 miles west of the reservation boundary for approximately 10 miles along the route. The Eastern Alternative crossing of Lake Sakakawea would be just upstream of the reservation boundary.

Review of National Wetlands Inventory data shows that the Eastern Alternative would cross approximately 25 additional emergent wetlands compared to the proposed route. Review of National Hydrography Dataset data indicates that the Eastern Alternative would cross over 40 additional intermittent waterbodies compared with the corresponding segment of the proposed segment of the Tioga-Elkhorn Creek pipeline. The crossing of Lake Sakakawea (waterbody itself) would be 2.6 miles compared to 2.4 miles for the proposed route. While a configuration of an HDD crossing was not developed for the Eastern Alternative, it is anticipated that the HDD would need to extend on either side of the lake proper, making the drill a minimum of 0.2 mile longer than that of the proposed lake crossing. Similar to the Western Alternative, the topography on both shores of Lake Sakakawea is much steeper than that of the proposed route and could potentially require grading and/or tree clearing for placement of the HDD pipe pullback.

While the Eastern Alternative would avoid crossing the USFS Little Missouri National Grassland, it would add over 50 miles to the pipeline route, increase the length of COE lands crossed, be in close proximity to homes and businesses, cross additional wetland and waterbody areas, and would require a longer HDD crossing of Lake Sakakawea. For these reasons, the Eastern Alternative was not selected as a viable route alternative.

10.6.2 Minor Route Alternatives

During the scoping period, WBI Energy received comment letters regarding potential route alternatives (see appendix 1I to Resource Report 1). As an alternative to constructing the proposed Tioga-Elkhorn

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Creek pipeline, it was suggested that WBI Energy consider replacing an existing pipeline that extends east of Watford City and ties into Northern Border south of Watford City with a larger diameter pipeline. WBI Energy's North Badlands sub-system's 16-inch-diameter pipeline generally follows a portion of the proposed Project route. This pipeline is designed to flow 200,000 million cubic feet per day, which would be interrupted for approximately 8 months during the construction of a replacement pipeline. The interruption would have a significant impact on upstream gas processing plants. To accommodate the combined volume level that would be flowing on the replacement pipeline, either the diameter of the pipeline would need to be increased or additional horsepower installed at the Elkhorn Creek Compressor Station, increasing Project costs. The pipeline would have to be extended from its current interconnect with Northern Border at Spring Creek to the Elkhorn Creek Compressor Station. In addition, WBI Energy's North Badlands sub-system is operated independently of WBI Energy's integrated system, with separate pressure requirements, transportation rates, and fuel reimbursement provision, which would be affected by replacing the current 16-inch-diameter pipeline. For these reasons, replacing the existing pipeline was not selected as a viable route alternative.

A second minor route alternative was suggested in the comment letters that would involve routing the Tioga-Elkhorn Creek pipeline between two existing WBI Energy pipelines from approximately MPs 52.1 to 52.7. The two existing WBI Energy pipelines run parallel across a portion of the landowner's property. Civil surveys were completed the week of July 20, 2020, and WBI Energy has been gathering information on the depths of other existing pipelines on the property. WBI Energy is continuing to work with the landowner on the route across their property.

Following 2020 field surveys and in response to concerns identified in the field by cultural crews and tribal monitors and to address engineering constraints, WBI Energy incorporated minor route variations along Line Section 25 between MPs 0 to 0.4 and 0.7 to 0.9 (see section 10.6.3). WBI Energy also evaluated two minor route alternatives through the area in the event that other potentially sensitive sites are identified: the Tioga West and Tioga East Alternatives (see figure 10.6.2-1).

The 1.4-mile-long Tioga West Alternative would depart from the existing Line Section 25 route east of 103rd Avenue NW at approximately MP 0.1. The alternative would head north for approximately 95 feet and then west for approximately 195 feet through herbaceous grassland and then cross 103rd Avenue NW. After crossing 103rd Avenue NW, the alternative would head west for about 0.4 mile and then north for about 0.2 mile across cultivated cropland, including approximately 190 feet of emergent herbaceous wetland. The alternative would then continue north for 0.2 mile and north-northeast for approximately 0.3 mile through herbaceous grassland. After crossing 69th Street NW, the alternative would continue in a north-northeast direction across approximately 70 feet of herbaceous grassland and 0.1 mile of cultivated cropland before heading east for approximately 80 feet and rejoining the existing Line Section 25 route between MPs 1.1 and 1.2. The Tioga West Alternative would be about 0.3 mile longer than the proposed route and would cross two public roads (103rd Avenue NW and 69th Street NW) and two National Hydrography Dataset-listed surface waters. Additionally, the alternative would cross approximately 0.7 mile of U.S. Fish and Wildlife Service wetland easements, which are also crossed by the proposed route. One new landowner would be affected by the Tioga West Alternative.

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The 2.7-mile-long Tioga East Alternative would depart from the existing Line Section 25 route east of 103rd Avenue NW at approximately MP 0.1 and head northeast for about 1.0 mile paralleling an existing pipeline right-of-way across approximately 0.25 mile of herbaceous grassland and 0.75 mile of cultivated cropland. After crossing 69th Street NW, the alternative would head north for approximately 0.75 mile and west for approximately 0.25 mile along the edge of cultivated cropland. At this point, the alternative would head northwest for approximately 0.1 mile to avoid a wetland area and then west for 0.4 mile and north for 0.2 mile, all through actively cultivated cropland. After crossing 70th Street NW, the alternative would rejoin the proposed route near approximately MP 2.1. The Tioga East Alternative would be about 0.6 mile longer than the proposed route and would cross two public roads (69th and 70th Streets NW) and two dirt roads/driveways. The same new landowner affected by the Tioga West Alternative would also be affected by the Tioga East Alternative.

10.6.3 Minor Route Variations

As a result of ongoing environmental field surveys, consultations with regulatory agencies, and continued Project engineering design, WBI Energy identified several minor pre-filing route variations along the current proposed route to avoid or minimize crossings of sensitive environmental features, address landowner concerns, and/or address engineering concerns. Table 10.6.3-1 summarizes the minor route variations identified and incorporated into the proposed pipeline routes since the submittal of WBI Energy's February 14, 2020 Application.

If any additional minor route variations are identified during ongoing environmental surveys, agency consultations, landowner discussions, and Project engineering, WBI Energy will provide the information in a supplemental filing.

10.7 Compressor Station Alternatives

The location of the proposed Elkhorn Creek Compressor Station was primarily determined by its proximity to Northern Border's pipeline for tie-in capabilities, landowner considerations, its position near existing roads and electric power facilities, and the availability of land for purchase. WBI Energy identified one alternative site using the same criteria (see figure 10.7-1): Alternative Site 1. The alternative site was then evaluated to determine if it provides any significant environmental advantages over the proposed site. Factors considered in this analysis included: landownership and landowner considerations, land use, conservation easements, wetlands and waterbodies, and slope of terrain.

No alternative sites were evaluated for the proposed expansion of the Tioga Compressor Station.

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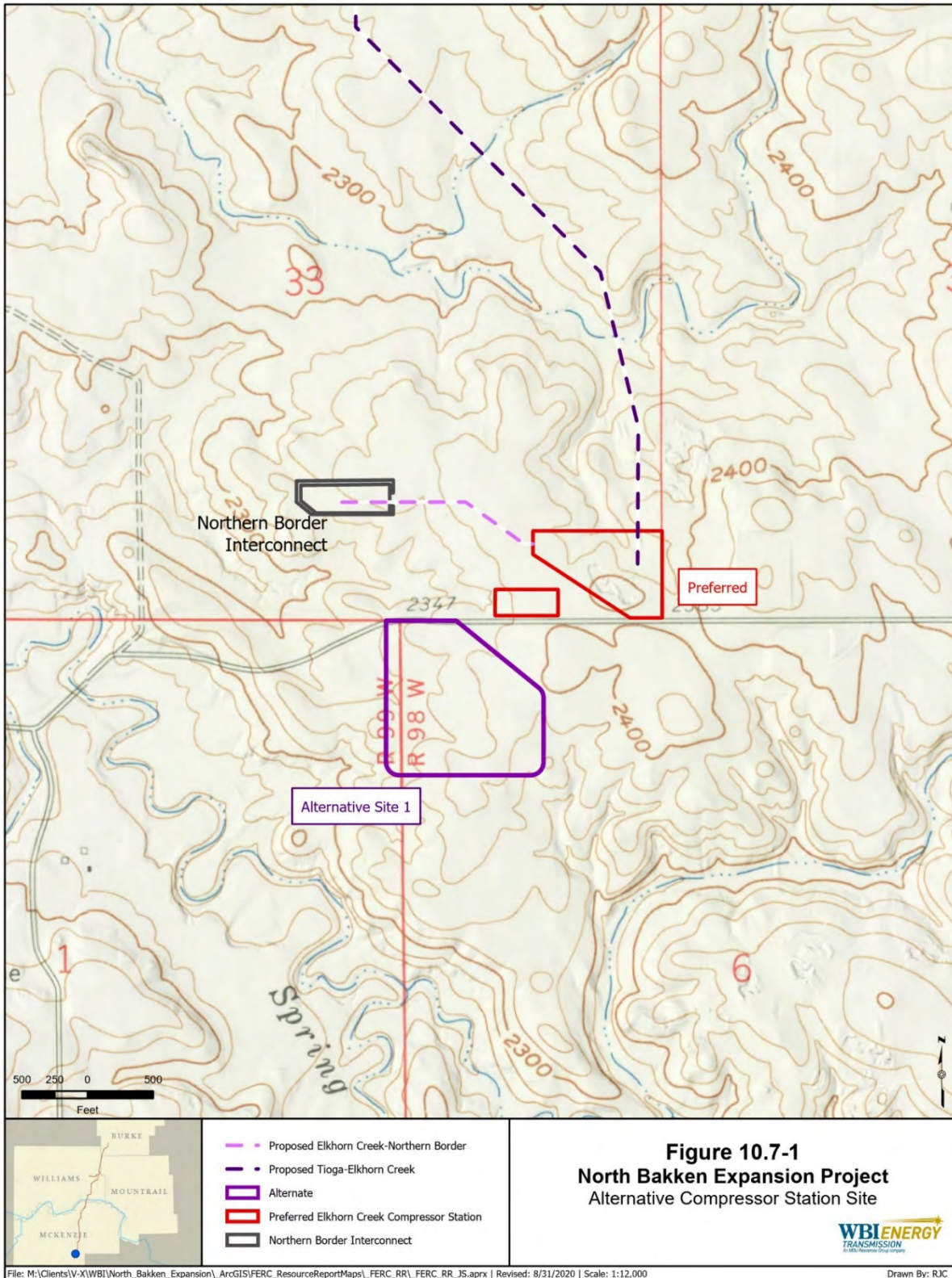
TABLE 10.6.3-1

**Summary of Minor Route Variations Identified and Incorporated into the Proposed Pipeline Routes
Since the Submittal of WBI Energy’s February 2020 Application**

Pipeline Facility/ Route Variation	Approximate Milepost Begin	Approximate Milepost End	County	Justification for Variation
Tioga-Elkhorn Creek				
Route Variation 1	0.0	0.4	Williams	Engineering adjustment and cultural sites
Route Variation 2	0.7	0.9	Williams	Engineering adjustment
Route Variation 3	12.1	12.3	Williams	Cultural sites
Route Variation 4	16.8	17.0	Williams	Dakota skipper habitat
Route Variation 5	17.8	18.0	Williams	Cultural sites
Route Variation 6	18.9	18.9	Williams	Cultural sites
Route Variation 7	19.2	19.8	Williams	Engineering adjustment and cultural sites
Route Variation 8	27.2	29.4	McKenzie	Adjustments to avoid cultural sites, Dakota skipper habitat, wetlands, and engineering constraints
Route Variation 9	29.9	30.3	McKenzie	Engineering adjustment
Route Variation 10	31.4	31.9	McKenzie	Cultural sites
Route Variation 11	32.3	32.3	McKenzie	Cultural sites
Route Variation 12	36.3	36.6	McKenzie	Cultural sites
Route Variation 13	52.7	55.5	McKenzie	Landowner requests, Dakota skipper habitat, wetlands, and engineering constraints
Route Variation 14	55.7	56.5	McKenzie	Dakota skipper habitat
Route Variation 15	58.2	58.9	McKenzie	Cultural sites
Route Variation 16	59.2	59.5	McKenzie	Cultural sites
Route Variation 17	60.5	62.6	McKenzie	Landowner request
Line Section 25 Loop				
Route Variation 18	0.1	1.1	Williams	Adjustment to avoid cultural sites, wetlands, and engineering constraints
Route Variation 19	1.6	2.0	Williams	Engineering adjustment
Route Variation 20	4.2	4.6	Williams	Engineering adjustment and cultural site
Route Variation 21	12.9	13.3	Burke	Engineering adjustment and cultural site
Route Variation 22	13.9	15.0	Burke	Engineering adjustment and cultural site
Route Variation 23	20.2	20.3	Burke	Engineering adjustment
Line Section 30 Loop				
Route Variation 24	8.7	8.9	Williams	Engineering adjustment
Route Variation 25	9.2	9.6	Williams	Engineering adjustment and cultural sites

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SUPPLEMENTAL FILING ATTACHMENTS