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RECLAMATION

**DK-5000-23-01 Draft Programmatic Environmental
Assessment**

Phase III Funding of Design, Construction, Operation and Maintenance of Water Infrastructure Projects

**Fort Berthold Rural Water System, Fort Berthold Indian
Reservation, North Dakota**



The Department of the Interior conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

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List of Acronyms

BIA – Bureau of Indian Affairs

BMPs - Best Management Practices

CFR – Code of Federal Regulations

Corps - U.S. Army Corps of Engineers

CEQ - Council of Environmental Quality

DASK – Dakota skipper

DRWA – Dakota Water Resources Act

EA – Environmental Assessment

EIS - Environmental Impact Statement

EO – Executive Order

EPA – U.S Environmental Protection Agency

ESA - Endangered Species Act of 1973

FBRWS – Fort Berthold Rural Water System

FBRWS Phase III – Fort Berthold Rural Water System Phase III Project

FER - Final Engineering Report

FONSI - Finding of No Significant Impact, the decision document that concludes an EA

Garrison Diversion - Garrison Diversion Conservancy District

GDU - Garrison Diversion Unit

GHG – Green House Gases

MAF – Million Acre-Feet

MR&I - Municipal Rural and Industrial (water supply)

NEPA - National Environmental Policy Act of 1969, as amended

NHPA - National Historic Preservation Act of 1966, as amended

NLEB – Northern Long-eared Bat

NRCS - U.S. Department of Agriculture, Natural Resources Conservation Service

NWP – Nationwide Permit

O& M– Operation and, Maintenance

PIPL – Piping Plover

Reclamation - U.S. Department of the Interior, Bureau of Reclamation

Reservation – The Fort Berthold Indian Reservation

RAX – Replacement, Additions and Extraordinary

ROW - Right of Way.

SDWA - Safe Drinking Water Act.

SPCC - Spill Prevention, Control and Countermeasure

Three Affiliated Tribes – Mandan, Hidatsa, and Arikara Nation

THPO – Tribal Historic Preservation Office

T&E – Threatened and Endangered (Species)

USFWS - U.S. Department of the Interior, U.S. Fish and Wildlife Service

WHCR – Whooping Crane

WTP – Water treatment plant

TABLE OF CONTENTS

EXECUTIVE SUMMARY	V
CHAPTER 1: INTRODUCTION	1
PROJECT AREA	1
NATIONAL ENVIRONMENTAL POLICY ACT	1
BACKGROUND	4
PURPOSE AND NEED FOR THE PROPOSED ACTION	6
CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES CONSIDERED.....	6
NO ACTION ALTERNATIVE	6
PROPOSED ACTION ALTERNATIVE: FBRWS PHASE III CONSTRUCTION, REPLACEMENT, UPGRADES AND O&M ACTIVITIES.....	7
<i>Additional FBRWS Activities</i>	20
PROJECT PLANNING AND DEVELOPMENT	20
<i>Site Preparation</i>	21
<i>Construction Activities</i>	21
<i>Utility Installation</i>	22
<i>Site Reclamation</i>	22
<i>Operation</i>	22
<i>Maintenance, Repair, and Replacement</i>	22
FBRWS PHASE III CONSTRUCTION	22
<i>Timeframes</i>	22
<i>Reasonably Foreseeable Future Actions</i>	23
<i>Geographic Scope</i>	23
CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	24
INTRODUCTION	24
SURFACE WATER	24
<i>Affected Environment</i>	25
ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION	26
<i>Environmental Effects of the No Action Alternative</i>	27
WILDLIFE AND FISHERIES	27
<i>Affected Environment</i>	27
<i>Environmental Effects of the Proposed Action</i>	29
<i>Environmental Effects of the No Action</i>	30
THREATENED AND ENDANGERED SPECIES	30
<i>Affected Environment by Species</i>	31
<i>Piping Plover</i>	31
<i>Rufa Red Knot</i>	33
<i>Whooping Crane</i>	35
<i>Pallid Sturgeon</i>	37
<i>Northern Long-eared Bat</i>	38
<i>Dakota Skipper</i>	40
<i>Monarch</i>	43
EFFECTS ANALYSIS	44
DETERMINATION OF EFFECTS BY SPECIES.....	45
ENVIRONMENTAL EFFECTS OF THE NO ACTION ALTERNATIVE	47

LAND AND VEGETATION RESOURCES	47
<i>Affected Environment</i>	47
<i>Environmental Effects of the Proposed Action Alternative</i>	48
<i>Environmental Effects of the No Action Alternative</i>	50
CULTURAL RESOURCES	50
<i>Affected Environment</i>	50
<i>Environmental Effects of the Proposed Action</i>	54
<i>Environmental Effects of the No Action Alternative</i>	56
PALEONTOLOGICAL RESOURCES	56
<i>Affected Environment</i>	56
<i>Environmental Effects of the Proposed Action</i>	57
<i>Environmental Effects of the No Action Alternative</i>	57
SOCIOECONOMICS	58
<i>Affected Environment</i>	58
<i>Environmental Effects of the Proposed Action</i>	59
<i>Environmental Effects of the No Action Alternative</i>	60
CLIMATE CHANGE	61
<i>Affected Environment</i>	61
<i>Environmental Effects of the Proposed Action</i>	63
INDIAN TRUST ASSETS	64
<i>Affected Environment</i>	64
<i>Environmental Effects of the Proposed Action</i>	65
<i>Environmental Effects of the No Action Alternative</i>	66
ENVIRONMENTAL JUSTICE	66
<i>Potential Effects of the Proposed Action</i>	67
<i>Potential Effects of the No Action Alternative</i>	67
SUMMARY OVERVIEW OF PROJECT EFFECTS	68
<i>Temporary Effects</i>	69
<i>Permanent Effects</i>	69
CHAPTER 4: AGENCY CONSULTATION AND COORDINATION	71
LIST OF PREPARERS	71
AGENCY COORDINATION	72
CHAPTER 5: ENVIRONMENTAL COMMITMENT AND MITIGATION MEASURES	74
CHAPTER 6: REFERENCES	78

FIGURES

FIGURE 1. OVERVIEW MAP OF THE FORT BERTHOLD INDIAN RESERVATION WITH FBRWS SEGMENT BOUNDARIES..	3
FIGURE 2. FOUR BEARS SEGMENT	14
FIGURE 3. NEW TOWN SEGMENT (NORTH).....	15
FIGURE 4. PARSHALL SEGMENT (NORTHEAST).....	16
FIGURE 5. WHITE SHIELD SEGMENT (EAST).....	17
FIGURE 6. TWIN BUTTES SEGMENT (SOUTH)	18
FIGURE 7. MANDAREE SEGMENT (WEST).....	19
FIGURE 8. ACTION AREA AND DESIGNATED CRITICAL HABITAT FOR THE PIPING PLOVER.....	33

FIGURE 9. WHCR MIGRATION CORRIDOR NEAR THE ACTION AREA	36
FIGURE 10. NEAREST WHOOPING CRANE SIGHTINGS TO FORT BERTHOLD RESERVATION	37
FIGURE 11. NORTHERN LONG-EARED BAT RANGE WITHIN ND AND POSITIVE PD DETECTIONS	40
FIGURE 12. DAKOTA SKIPPER OBSERVATIONS AROUND FORT BERTHOLD RESERVATION.....	42
FIGURE 13. DAKOTA SKIPPER PROBABILITY OF OCCURRENCE (USFWS 2022)	43
FIGURE 14. ECOREGION BOUNDARIES WITHIN FORT BERTHOLD RESERVATION.....	48
FIGURE 15. NORTH DAKOTA ARCHAEOLOGICAL STUDY UNITS FROM THE NORTH DAKOTA COMPREHENSIVE PLAN FOR HISTORIC PRESERVATION	51
FIGURE 16. 1914 GLO PLAT MAP OF TOWNSHIP 148 NORTH, RANGE 94 WEST, FORT BERTHOLD INDIAN RESERVATION (INCLUDES THE LOCATION OF PRESENT DAY MANDAREE, ND)	53
FIGURE 17. DIFFERENCES IN SIMULATED END OF MONTH LAKE SAKAKAWEA WATER SURFACE ELEVATION FOR THREE CLIMATE CHANGE PROJECTIONS FROM THE BASELINE (NO CLIMATE CHANGE)	63

TABLES

TABLE 1. ESTIMATED DISTURBANCE AREA BY TYPE OF ACTIVITY.....	7
TABLE 2. ESTIMATED CONSTRUCTION AND O&M FOOTPRINTS ASSOCIATED WITH NEW FEATURES CONSTRUCTED UNDER FBRWS PHASE III	9
TABLE 3. O&M FOOTPRINTS ASSOCIATED WITH EXISTING FBRWS FEATURES AND ESTIMATED CONSTRUCTION FOOTPRINTS ASSOCIATED WITH UPGRADED OR REPLACEMENT FEATURES.....	12
TABLE 4. ADDITIONAL CONSTRUCTION, REPLACEMENT, UPGRADES AND O&M ACTIVITIES	20
TABLE 5. REASONABLY FORESEEABLE FUTURE ACTIONS	23
TABLE 6. GARRISON RESERVOIR STORAGE SPACE ALLOCATIONS	26
TABLE 7. FEDERALLY LISTED, PROPOSED AND CANDIDATE RESOURCES WITHIN THE ACTION AREA	31
TABLE 8. FORT BERTHOLD RESERVATION POPULATION CHANGE OVER TIME	58
TABLE 9. POPULATION AND DEMOGRAPHIC TRENDS FOR BILLINGS, DUNN, MCKENZIE, MCLEAN, MERCER, AND MOUNTRAIL COUNTIES COMPARED TO THE RESERVATION AND NORTH DAKOTA SOURCE: US CENSUS BUREAU 2023B, US DEPARTMENT OF COMMERCE 2020 NOTE: DATA FOR THE FORT BERTHOLD RESERVATION WAS NOT AVAILABLE FOR 2015, SO 2014 DATA WAS SUBSTITUTED TO SHOW GENERAL TRENDS.....	59
TABLE 10. EMPLOYMENT AND INCOME IN THE ANALYSIS AREA	59
TABLE 11. SUMMARY OF POTENTIAL TEMPORARY AND PERMANENT EFFECTS OF THE PROPOSED.....	68
TABLE 12. SUMMARY EFFECTS COMPARISON OF THE NO ACTION AND PROPOSED ACTION	69
TABLE 13. LIST OF PREPARERS	71
TABLE 14. LIST OF AGENCIES CONSULTED	72
TABLE 15. REQUIRED ENVIRONMENTAL COMMITMENTS FOR THE PROPOSED ACTION	74

APPENDICIES

APPENDIX A: FBRWS Phase III Project Descriptions
APPENDIX B: FBRWS Phase III Routine O&M Activities
APPENDIX C: USFWS Timing and Buffers Recommendations
APPENDIX D: USFWS Concurrence (Pending)
APPENDIX E: Scoping Letter Responses
APPENDIX F: Biological and Natural Resources Checklist

Executive Summary

The Bureau of Reclamation (Reclamation) designed, constructed, owns, operates and maintains Phases I & II of the Fort Berthold Rural Water System (FBRWS) for the Three Affiliated Tribes. and is proposing implementation of Phase III of the FBRWS Project. Reclamation has almost exhausted the original authorized ceiling of \$70 million for the FBRWS and is now moving on to a phase in the project where new construction or replacing existing project features will primarily be funded from other sources rather than Dakota Water Resources Act authorized construction funding. Most of the new funding will come from Bipartisan Infrastructure Legislation (BIL) Aging Infrastructure funding with lesser amounts coming from other federal agencies, Reclamation operation and maintenance (O&M) replacements, additions and extraordinary funding, or Three Affiliated Tribes contributions. FBRWS Phase III Project infrastructure improvements will enhance the capability of the FBRWS to provide reliable and safe drinking water to the residents of the Fort Berthold Reservation into the foreseeable future.

The Proposed Action includes the funding and construction of a new Mandaree Water Treatment Plant (WTP), water treatment capacity expansion of the existing Four Bears WTP, addition or replacement of several water storage tanks, repairs to the Mandaree intake site and access road, installation of meters in tribal communities, construction of a new FBRWS administration and O&M shop building, construction of several storage buildings located within each water service area on the Fort Berthold Reservation, and construction of two booster stations associated with the Parshall Regional WTP. The Proposed Action also includes a more comprehensive description of the ongoing and future FBRWS operation and maintenance (O&M) activities.

Effects to the human and natural environment would be mitigated by following the Bureau of Reclamation's Dakotas Area Office, Environmental Commitments in **Table 15**. A summary of impacts as a result of the Proposed Action is shown in **Table 12**.

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Chapter 1: Introduction

The Bureau of Reclamation (Reclamation) is the lead federal agency and owner of the Fort Berthold Rural Water System (FBRWS) that is operated and maintained for the benefit of the Mandan, Hidatsa, and Arikara Nation (Three Affiliated Tribes) under a Public Law 93-638 contract with Reclamation. The Three Affiliated Tribes established Fort Berthold Rural Water (FBRW) as the tribal entity that performs day-to-day construction, operation, maintenance, and replacement of the FBRWS. The purpose of the FBRWS is to bring safe drinking water to the residents of the Fort Berthold Reservation which promotes the development of a strong and stable tribal government. Reclamation has prepared this Programmatic Environmental Assessment (PEA) for the continued construction of the FBRWS project, replacement, and upgrades of existing FBRWS project features, and the continued operation and maintenance (O&M) of existing and new project facilities. A PEA is a broad or high-level National Environmental Protection Act (NEPA) review that assesses the environmental impacts of proposed policies, plans, programs, or projects for which subsequent actions will be implemented.

The Proposed Action includes the continued build-out of the FBRWS as identified in the 2021 FBRWS Master Plan (Phase III). This work would include construction of new water distribution systems in unserved Segments on the Fort Berthold Reservation and adding new water service connections to the existing FBRWS rural water distribution system. (**Figure 1**).

The Proposed Action also includes ongoing and future FBRWS activities necessary to operate, maintain, repair, and/or replace existing potable water infrastructure needed to provide water service safely, securely, and reliably to all residents on the Fort Berthold Reservation.

Project Area

The Fort Berthold Reservation boundary encompasses 6 (six) counties in northcentral North Dakota including McKenzie, McLean, Dunn, Mountrail, Mercer, and Ward Counties. Land ownership within the reservation includes a mixture of Tribal trust and allotted lands administered by the BIA, other federally administered lands (i.e. Corps, Reclamation), and fee patent private lands. The Fort Berthold Reservation encompasses multiple ecoregions including the Great Plains (level I ecoregion), West-Central Semi-Arid Prairies (level II ecoregions), Northwestern Glaciated Plains, Northwestern Glaciated Plains, (level III ecoregions), and Little Missouri Badlands, River Breaks, Missouri Plateau, Missouri Coteau Slope (level IV ecoregions). The Northwestern Glaciated Plains marks the western extent of continental glaciation and contains substantial surface irregularity. Fort Berthold Reservation land uses consist mainly of oil and gas development, farming, and cattle ranching. Precipitation averages 16.8 inches annually. The average annual low temperature is in January, 16.9 °F, while July has the highest average temperature, 69.9 °F (NOAA 2023).

National Environmental Policy Act

To comply with the National Environmental Policy Act and related environmental laws and regulations, federal agencies must consider the potential environmental effects of their decisions regarding approval of projects or projects receiving federal funding. In addition, Reclamation must

evaluate connected actions as required in the Council of Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) 1508.25 in evaluating the effects of the entire action. This PEA documents the proposed federal action, alternative actions considered, expected impacts of those actions, and compliance with environmental laws and regulations (Reclamation 2003) (refer “Historical and Regulatory Background” below for further details).

Reclamation is solely responsible for the preparation of this PEA to fulfill the NEPA requirements for this Proposed Action, CEQ Regulations (40 CFR 1500-1508) and related environmental regulatory requirements.

This PEA may lead to a Finding of No Significant Impact (FONSI) if impacts are found to be insignificant or, if significant environmental impacts are identified, Reclamation may proceed with the preparation of an environmental impact statement. Reclamation defines significance in accordance with 40 CFR 1508.27 in reference to context and intensity.

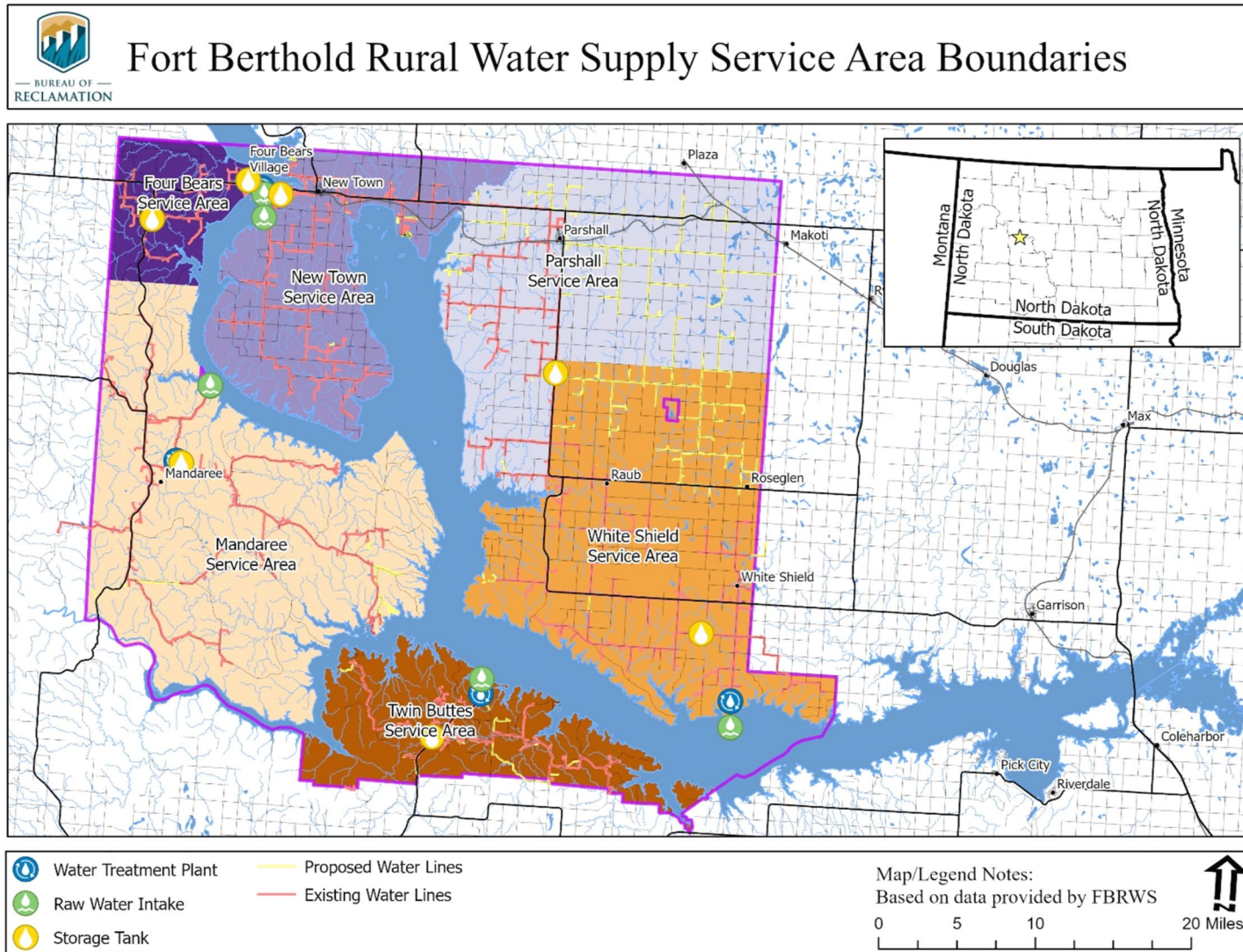


Figure 1. Overview map of the Fort Berthold Indian Reservation with FBRWS Segment Boundaries

Background

The FBRWS project was authorized by Public Law 89-108 (August 5, 1965) Garrison Diversion Unit, Missouri River Basin Project, as amended by the Garrison Diversion Reformulation Act of 1986 (Public Law 99•294, 100 Stat 41B), and as further amended by §§3510 and 1701 of the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575, 106 Stat. 4600) and modified by Senate 623, the Dakota Water Resources Act (DWRA) of 2000.

DWRA Section 7. (d) Indian Municipal Rural and Industrial Water Supply states “The Secretary shall construct operate and maintain such municipal rural and industrial water systems as the Secretary determines to be necessary to meet the economic public health and environmental needs of the Fort Berthold, Standing Rock, Turtle Mountain including the Trenton Indian Service Area and Fort Totten Indian Reservations and adjacent areas. DWRA authorized the construction of a Fort Berthold Reservation-wide water supply and delivery system (FBRWS) serving all residents of the Fort Berthold Reservation and authorized a \$70 million construction ceiling with indexing to construct the project.

Reclamation has almost exhausted the original authorized construction ceiling of \$70 million for FBRWS and is now moving on to a phase in the project where new construction or replacing existing project features will primarily be funded from other sources other than DWRA-authorized construction funding. Most of the new funding will come from Bipartisan Infrastructure Legislation (BIL) Aging Infrastructure funding with lesser amounts coming from Indian Health Service, EPA, State of North Dakota, Reclamation replacements, additions and extraordinary RAX funding, or Three Affiliated Tribes contributions.

The 1988 *Special Report: Plan Formulation, Fort Berthold Reservation Municipal, Rural, and Industrial Water Supply*, collaboratively developed by Reclamation and the Three Affiliated Tribes, indicated a shortfall in funding for the FBRWS (Reclamation 1988). The report estimated that the costs of construction could approach \$60 million, much greater than what was originally authorized funding of \$8 million under the Garrison Diversion Reformulation Act of 1986. Therefore, a phased development approach was adopted. Phase I included all features that had already been planned, designed, or constructed to serve as many people as possible under the original authorization level; the focus of Phase I was to deliver water to Reservation communities. Phase II included construction of planned facilities not constructed under Phase I and other facilities necessary to meet full Reservation-wide municipal, rural, and industrial (MR&I) water needs.

Using the \$8 million authorized under the Garrison Diversion Reformulation Act, four (4) water treatment plants and limited associated infrastructure were constructed in the late 1990s (Phase I). These features, with associated NEPA documents, included:

- Four Bears Water Treatment Plant and Intake located in the Four Bears Segment and constructed meet the water supply needs of the Four Bears Segment. NEPA compliance was completed with an EA and FONSI (MS-150-90-7) issued in March 1991.
- Mandaree Water Treatment Plant located in the West Segment of the Reservation constructed to serve the water needs of the community of Mandaree. NEPA compliance was completed with a Categorical Exclusion Checklist (CEC) (DP-150-89-128) in May 1989)

- White Shield Water Treatment Plant and Intake located in the East Segment and constructed to serve the water needs of the community of White Shield. NEPA compliance was complete with an EA and FONSI (MS-150-90-8) issued in February 1991.
- Twin Buttes Water Treatment Plant located in the South Segment and constructed to serve the water needs of the community of Twin Buttes. NEPA compliance was completed with an EA and FONSI in April 1990.

In March of 1995, the Three Affiliated Tribes and Reclamation entered into a cooperative agreement under Public Law 93-638 specifically for planning and NEPA compliance components of Phase II of the FBRWS. Public Law 93-638, as amended, (Indian Self-Determination and Education Assistance Act), and allows federal agencies to make grants directly to federally recognized Indian tribes and gives authority to Native American tribes to directly administer funding from these grants. Three Affiliated Tribes and the Secretary of the Interior have used Public Law 93-638 to designate roles for the FBRWS planning, design, construction, and OM&R activities.

The *Fort Berthold Rural Water System Water Development Final Engineering Report* (Bartlett & West 2006) was prepared by Bartlett & West to review the current and potential future water needs of the Reservation. This report contained analyses of current and future water needs, a listing of needed infrastructure to provide for such needs, cost estimates for the construction of such infrastructure, cost estimates for the operation and maintenance of such infrastructure, and a plan for a phased development of such infrastructure over an extended time. Specific engineering and water treatment discussions are described in detail in this report. Reference to the 2006 report by Bartlett and West is made throughout this document as the 2006 Engineering Report.

After development of the 2006 Engineering Report, Reclamation completed a PEA titled *Programmatic Environmental Assessment for the Fort Berthold Rural Water System: Phase II Upgrade and Expansion* (Phase II PEA)(Reclamation 2003). The Phase II PEA analyzed the environmental effects of proposed Phase II infrastructure identified in the 2006 Engineering Report. The scope of the Phase II PEA included the construction, operation, and maintenance of the FBRWS Phase II facilities to meet the economic, public health, and environmental needs of all residents within the exterior boundaries of the Reservation. Phase II was defined as:

- Construction of 679 miles of pipeline, nine (9) booster stations, and eight (8) water storage tanks;
- Upgrading/expanding the existing water treatment plants in Mandaree, White Shield, Four Bears, and Twin Buttes; and
- Expansion or construction of a new O&M building to meet additional staffing needs.

The Phase II PEA provided information about FBRWS projects to the public and to Tribal, State, and Federal Agencies, all of which either provide funding, and /or issued licenses and permits. The Phase II PEA established the framework for decision-making on future projects. When the Phase II PEA was published, there was still uncertainty for pipeline alignments and locations of additional facilities and the need for additional NEPA compliance was anticipated. **Figure 1** includes the Phase II FBRWS distribution system build-out as outlined in the Phase II PEA.

Purpose and Need for the Proposed Action

The purpose of the FBRWS Phase III Project is to provide and expand the municipal, rural and industrial water services provided on the Fort Berthold Reservation in North Dakota to meet the public health, environmental, and economic needs of the Fort Berthold Reservation. FBRWS was authorized by Public Law 89-108, as amended and modified.

The public health, environmental and economic needs of the Three Affiliated Tribes are currently not being met by the FBRWS. There is a need for continued expansion of the FBRWS based on both water quality and quantity concerns. Hundreds of rural homes on the Fort Berthold Reservation currently use hauled (cistern) or groundwater which does not meet Safe Drinking Water Act (SDWA) primary (health/safety) or secondary (aesthetic) standards. In particular, the concentrations of iron, manganese, sodium, sulfate, and total dissolved solids frequently exceed their respective secondary standards. High concentrations of these constituents limit the usefulness of these existing supplies. Impacts range from staining of clothing from high concentrations of iron and manganese aggravating hypertension, which is prevalent on the Reservation, from high concentrations of sodium. Phase III activities would provide water service to additional rural homes within Fort Berthold Reservation and would meet SDWA primary and secondary quality standards.

The 2021 FBRWS Master Plan determined that the Fort Berthold Reservation population will increase by 61 percent by 2050 which will greatly increase future water demands. The FBRWS has imposed a moratorium on new non-domestic water connections in West Segment (Mandaree area) due to limited water treatment plant capacity. FBRWS is expected to impose further water connection restrictions in other Segments of the Fort Berthold Reservation without expansion of the FBRWS water treatment plants and associated distribution systems. The Three Affiliated Tribes/Segments are constructing dozens of facilities within tribal communities which need FBRWS water service connections. These facilities include medical clinics, emergency services (law enforcement and fire), community centers, schools, and elder care centers, which improve the quality of life on the Fort Berthold Reservation. The limited capacity of the distribution systems prevents Indian landowners from developing homesites on their allotted lands. Phase III activities would provide water service to these rural homes and community facilities to meet the current and future demand of a growing population.

Chapter 2: Proposed Action and Alternatives Considered

No Action Alternative

Under the No Action Alternative, the Phase III FBRWS projects would not be constructed and the existing FBRWS facilities would be operated and maintained as currently identified in the existing P.L. 93-638 O&M contract between the Three Affiliated Tribes and the Bureau of Reclamation. Fort Berthold Reservation water supply needs identified through 2050 in the FBRWS 2021 Master Plan would not be met. Potable water supplies would continue to be limited due to FBRWS limited capacity, and a high percentage of homes and businesses on the Fort Berthold Indian Reservoir

could not be served by the FBRWS. The only federal entity that could provide limited future water service connections is the Indian Health Service (IHS) but they are only authorized to fund water service connections to Indian residences. Water service to most non-Indian reservation residences, livestock operators and other commercial entities would be curtailed. The Tribes opportunity to sell raw water to the oil industry and the revenue from those sales would be impacted and cause economic hardship to the Tribe. The No Action Alternative would not meet the purpose and need as identified for the Proposed Action or meet the economic, public health, and environmental needs of all residents within the external boundaries of the Fort Berthold Reservation.

Under the No Action Alternative FBRWS annual water withdrawals from Lake Sakakawea would remain at approximately 3,100 acre-feet depending on weather conditions or industrial water sales.

Proposed Action Alternative: FBRWS Phase III Construction, Replacement, Upgrades and O&M Activities

The Proposed Action includes three major components; 1) continued build-out of the FBRWS as identified in the 2021 FBRWS Master Plan (FBRWS Phase III) (Bartlett & West 2021); 2) replacement and upgrades to existing facilities; and 3) identification and implementation of future FBRWS O&M activities. FBRWS annual water withdrawals from Lake Sakakawea would increase to approximately 4,100 acre-feet depending on weather conditions or industrial water sales. Because of uncertainties associated with energy sector developments on the Fort Berthold Reservation and how this may impact growth on the Reservation, a 30-year design life has been chosen to better identify the Three Affiliated Tribe's needs out to the year 2050.

Table 1 below shows disturbance area values used to estimate the potential acres affected with the different types of activities that would occur during FBRWS Phase III implementation. Site-specific construction footprints will vary in size based FBRWS feature. A new administration and O&M shop building and Mandaree water treatment plant will each have a footprint of up to 20 acres while a new tank will require less than 5 acres. The construction easements for the pipeline distribution system and service lines will typically require a width of 50 feet. Permanent easement of 25 feet on either side of the as-installed pipeline is typically acquired for O&M and replacement, as well as access to the pipeline from existing roadways. Disturbance area estimates are conservative and may be further reduced using of applicable conservation measures in more detail later in this section.

Table 1. Estimated Disturbance Area by Type of Activity

Type	Disturbance Area	
Pipelines		
New Construction	50	feet
Replacement	50	feet
O&M	25	feet
Storage Tanks		
New Construction	5	acres
Replacement	1	acre
O&M	1	acre
Buildings		
New Construction (Storage Bldg.)	2	acres

O&M (Storage Bldg.)	1	acre
Replacement Admin. Bldg.)	20	acres
O&M (Admin. Bldg.)	5	acres
Replacement (O&M Shop)	20	acres
O&M (O&M Shop)	5	acres
Demolition (Admin/O&M Shop)	5	acres
Water Treatment Plants		
New Construction*	20	acres
Upgrade/Replacement	5	acres
O&M	2	acres
Demolition	5	acres
Raw Water Intakes		
New Construction	2	acres
Upgrade/Replace	2	acres
O&M	1	acre
Booster Station		
New Construction	1	acre
Upgrade/Replace	1	acre
O&M	0.5	acre

*Replacement of Mandaree WTP in new location

Tables 2 and 3 lists the planned activities and associated construction and O&M footprints associated with new construction, replacement, and upgrades to existing facilities, and FBRWS O&M activities.

Approximately 180.15 miles of new water service pipeline will be added to the existing FBRWS distribution system in the Parshall and White Shield Segments. The Mandaree water treatment plant will be replaced, Four Bears water treatment plant modified to increase treatment capacity, Four Bears, Twin Buttes, and White Shield will be updated to enhance treatment capabilities. Raw water intake facilities serving the Mandaree, Twin Buttes and White Shield water treatment plants will also be modified to assure reliable operations and access.

Five or more new water storage tanks will also be constructed, and other existing tanks will be replaced in some locations. Two or more new booster stations will be added to enhance water supply between service areas. Master and service meters will be installed on all unmetered FBRWS connections throughout the FBRWS to enhance water accounting. The existing FBRWS administration and O&M shop building will be replaced, and new storage buildings added within each of FBRW's six water service area on the Fort Berthold Reservation.

FBRW will also continue to develop temporary Lake Sakakawea intake sites for production and transmission of raw water supplies at Four Bears, north Mandaree, south Mandaree, Wolf Chief Bay (Twin Buttes), Deep Water Bay (Parshall – Lucky-Mound), as well as other locations yet to be identified sites. These temporary raw water supplies are intended to meet oil industry needs, as well as other future needs when identified, on the Fort Berthold Reservation.

FBRWS Phase III activities are estimated to temporarily disturb approximately 1,156.8 acres during construction of new pipelines, storage tanks, communication booster stations, and buildings. An estimated 95 acres will also be disturbed during upgrading and replacement of existing FBRWS facilities. FBRWS Phase III is estimated to add about 562.9 acres to FBRWS's O&M footprint,

increasing its total to approximately 2,119.4 acres. Total O&M easements would increase by about 27 percent when compared to the existing FBRWS easements.

Figures 2 through 7 show the approximate locations of Phase III features, as well as the locations of existing FBRWS facilities. New water distribution systems in unserved areas in Parshall Areas 3 & 4 (~91 miles) and White Shield Areas 3 & 4 (~89 miles) are shown **Figures 2-7**.

FBRWS Phase III construction activities include:

- a) Two new water distribution systems in the Parshall and White Shield areas;
- b) Replacement of the existing Mandaree water treatment plant in a new location;
- c) Upgrades to increased treatment capacity of the Four Bears water treatment plant;
- d) Upgrades to enhance treatment capability at the Four Bears, Twin Buttes, and White Shield water treatment plants;

Table 2. Estimated Construction and O&M footprints associated with NEW FEATURES constructed under FBRWS Phase III

WATER SERVICE AREA				
Feature Type	Miles of Pipeline	Number of Features	Construction Footprint (acres)	New O&M Footprint (acres)
FOUR BEARS WSA				
Pipeline	0		0	0
Water Treatment Plants		0	0	0
Raw Water Intake		0	0	0
Booster Stations		0	0	0
Storage Tanks		0	0	0
FBRWS Admin & Maintenance Building		1	40	5
Storage Buildings		1	2	2
WHITE SHIELD WSA				
Pipeline	90.75		550	275
Water Treatment Plants		0	0	0
Raw Water Intakes		0	0	0
Booster Stations		1	1	0.5
WATER SERVICE AREA				
Feature Type	Miles of Pipeline	Number of Features	Construction Footprint (acres)	New O&M Footprint (acres)
Storage Tanks		1	5	1
Storage Building		1	2	2
Twin Buttes WSA				
Pipeline	0		0	0
Water Treatment Plants		0	0	0
Raw Water Intakes		0	0	0
Booster Stations		0	0	0
Storage Tanks		1	5	1
Storage Building		1	2	2
MANDAREE WSA				
Pipeline	0		0	0

Water Treatment Plants		0	0	0
Raw Water Intakes		0	0	0
Booster Stations		0	0	0
Storage Tanks		0	0	0
Storage Building		1	2	2
LITTLE SHELL WSA				
Pipeline	0.4		2.4	1.2
Water Treatment Plants		0	0	0
Raw Water Intakes		0	0	0
Booster Stations		1	1	0.5
Storage Tanks		1	5	1
Storage Building		0	0	0
PARSHALL-LUCKY MOUND WSA				
Pipeline	89.0		539.4	269.7
Water Treatment Plants		0	0	0
Raw Water Intakes		0	0	0
Booster Stations		0	0	0
Storage Tanks		0	0	0
Storage Building		1	2	2
NEW FEATURES TOTAL				
Feature Type	Miles of Pipeline	Number of Features	Construction Footprint (acres)	New O&M Footprint (acres)
Miles of Pipeline	180.15		1,091.8	545.9
Water Treatment Plants		0	0.0	0.0
Raw Water Intakes		0	0.0	0.0
Booster Stations		2	2.0	1.0
Storage Tanks		3	15.0	3.0
Buildings		6	23.0	13.0
TOTALS			1,156.8	562.9

- e) Modifications of existing Lake Sakakawea primary and backup raw water intakes facilities located in Mandaree, Twin Buttes and White Shield areas;
- f) Five new water storage tanks;
- g) Two new water booster stations;
- h) Installation of water meters on all unmetered FBRWS connections, estimated to be 500 meters;
- i) Installation of master meters at a dozen or more locations along existing and new pipelines;
- j) Construction of a new FBRWS Administration and O&M Shop building in a new location in the Four Bears Segment.
- k) Five new storage buildings
- l) Development of at least six Lake Sakakawea temporary intake sites for the production and transmission of raw water to serve the oil industry on the Fort Berthold Reservation.

With completion of FBRWS Phase III, O&M activities for all new and existing features would include:

- water distribution systems up to and including water meters as shown in Figure 1;
- distribution system appurtenances (hydrants, cleanouts, control valves, PRVs, and ARVs);
- four water treatment plants and Lake Sakakawea intakes;
- twelve water storage tanks;
- eight water booster stations;
- FBRWS administration and O&M shop building;
- five storage buildings;
- six temporary Lake Sakakawea intake sites;
- and all FBRWS O&M access roads and security fencing/gates.

In addition, FBRW will be installing hundreds of new water service connections to the existing and new FBRWS rural water distribution system pipelines. See **Appendix A** (Construction and Existing project Feature Replacements or Upgrades) and **Appendix B** (Routine O&M Activities) for additional details. All FBRWS construction and O&M activities will incorporate Reclamation's environmental commitments and will implement best management practices for MR&I water supply projects.

Table 3. O&M footprints associated with existing FBRWS features and estimated construction footprints associated with UPGRADED OR REPLACEMENT FEATURES

WATER SERVICE AREA							
Feature Type	Miles of Pipeline	Number of Existing Features	O&M Footprint (acres)	Pipeline Upgrades & Replacement (miles)	Features with Upgrades or Replaced	Demolition & Abandoned Features	Construction Footprint (acres)
FOUR BEARS WSA							
Pipeline	57		172.7	0.75		0	4.5
Water Treatment Plants		1	2.0		1	0	5.0
Raw Water Intake		2	2.0		2	0	10.0
Booster Stations (Comm.)		2	1.0		0	0	0.0
Storage Tanks		2	2.0		1	0	1.0
FBRW Admin. Bldg.		1	5.0		1	1	15.0
FBRW O&M Shop		1	5.0		1	1	15.0
Storage Buildings		0	0.0		0	0	0.0
Service Connections		276					
WHITE SHIELD WSA							
Pipeline	144		436.4	0			0
Water Treatment Plants		1	2.0		1	0	5
Raw Water Intakes		2	2		0	0	0
Booster Stations (Comm.)		0	0		0	0	0
Storage Tanks		1	1		0	0	0
Storage Buildings		0	0		0	0	0
Service Connections		344					
Twin Buttes WSA							
Pipeline	79			0			0
Water Treatment Plants		1	2		1	1	5
Raw Water Intakes		2	2		0	0	0
Booster Stations (Comm.)		0	0		0	0	0
Storage Tanks		1	1		0	2	2
Storage Buildings		0	0		0	0	0
Service Connections		240					
MANDAREE WSA							
Pipeline	149			0			0
Water Treatment Plants		1	2		1	0	5
Raw Water Intakes		2	2		2	0	10
Booster Stations (Comm.)		2	1		0	0	0
Storage Tanks		1	1		0	0	0

Storage Buildings		0	0		0	0	0
Service Connections		390					
Feature Type	Miles of Pipeline	Number of Existing Features	O&M Footprint (acres)	Pipeline Upgrades & Replacement (miles)	Features with Upgrades or Replaced	Demolition & Abandoned Features	Construction Footprint (acres)
LITTLE SHELL WSA							
Pipeline	206		624.2	0.4			2.4
Water Treatment Plants		0	0		0	0	0
Raw Water Intakes		0	0		0	0	0
Booster Stations (Comm.)		1	0.5		0	0	0
Storage Tanks		1	1		0	0	0
Storage Buildings		0	0		0	0	0
Service Connections		385					
PARSHALL-LUCKY MOUND WSA							
Pipeline	89		269.7	0			0
Water Treatment Plants		0	0		0	0	0
Raw Water Intakes		0	0		0	0	0
Booster Stations (Comm.)		0	0		0	0	0
Storage Tanks		1	1		0	0	0
Storage Buildings		0	0		0	0	0
Service Connections		132					
EXISTING FEATURES TOTAL							
Miles of Pipeline	724		1,503.0	1.15			7.0
Water Treatment Plants		4	8		4	1	20.0
Raw Water Intakes		8	8		4	0	20.0
Booster Stations (Comm.)		5	2.5		0	0	0.0
Buildings (Admin & Shop)		2	10.0		2	2	30.0
Storage Tanks		7	7.0		1	1	3.0
Storage Buildings		0	0.0		0	1	0.0
Service Connections		1492					
TOTALS		26	1,538.5		11	5	80.0

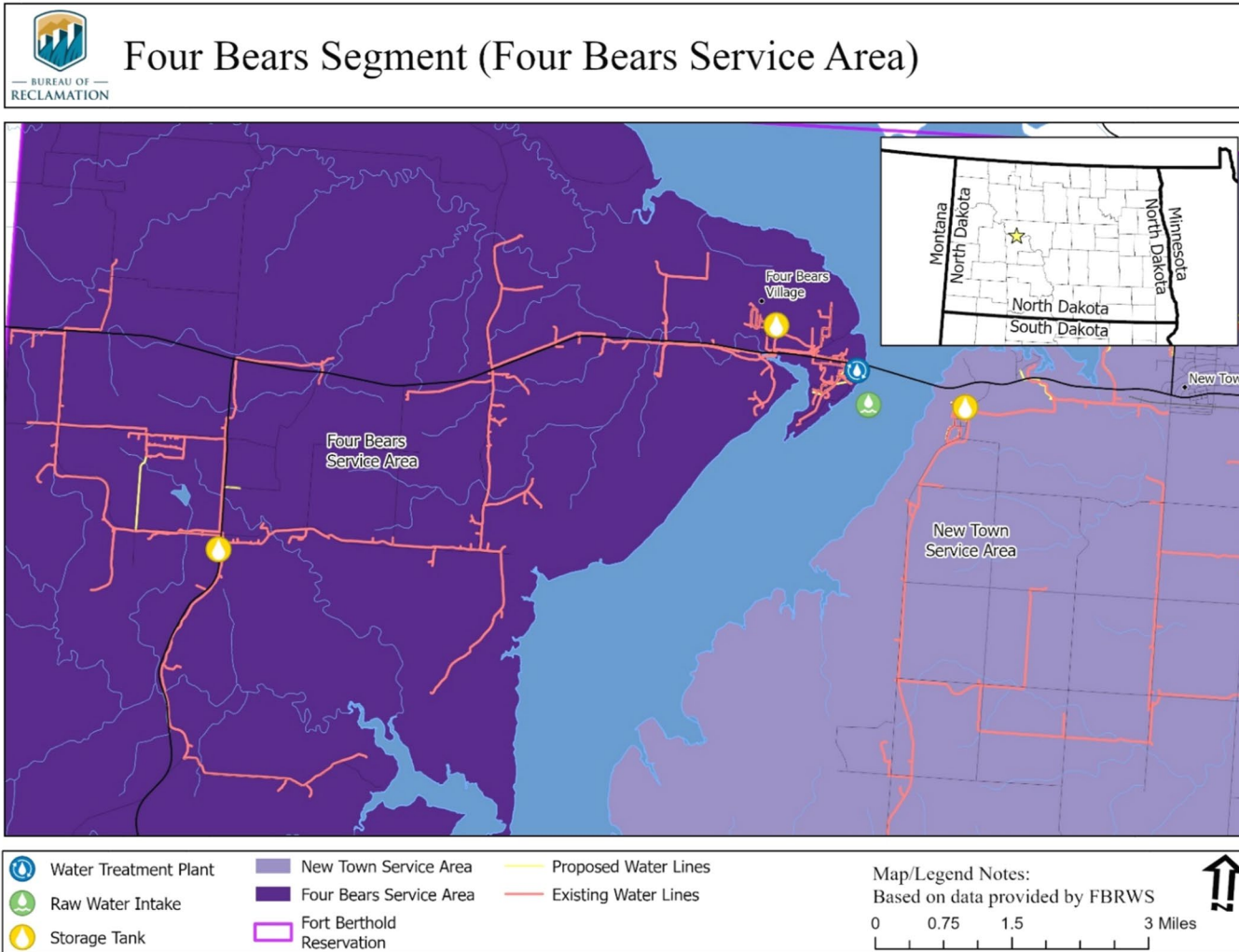


Figure 2. Four Bears Segment

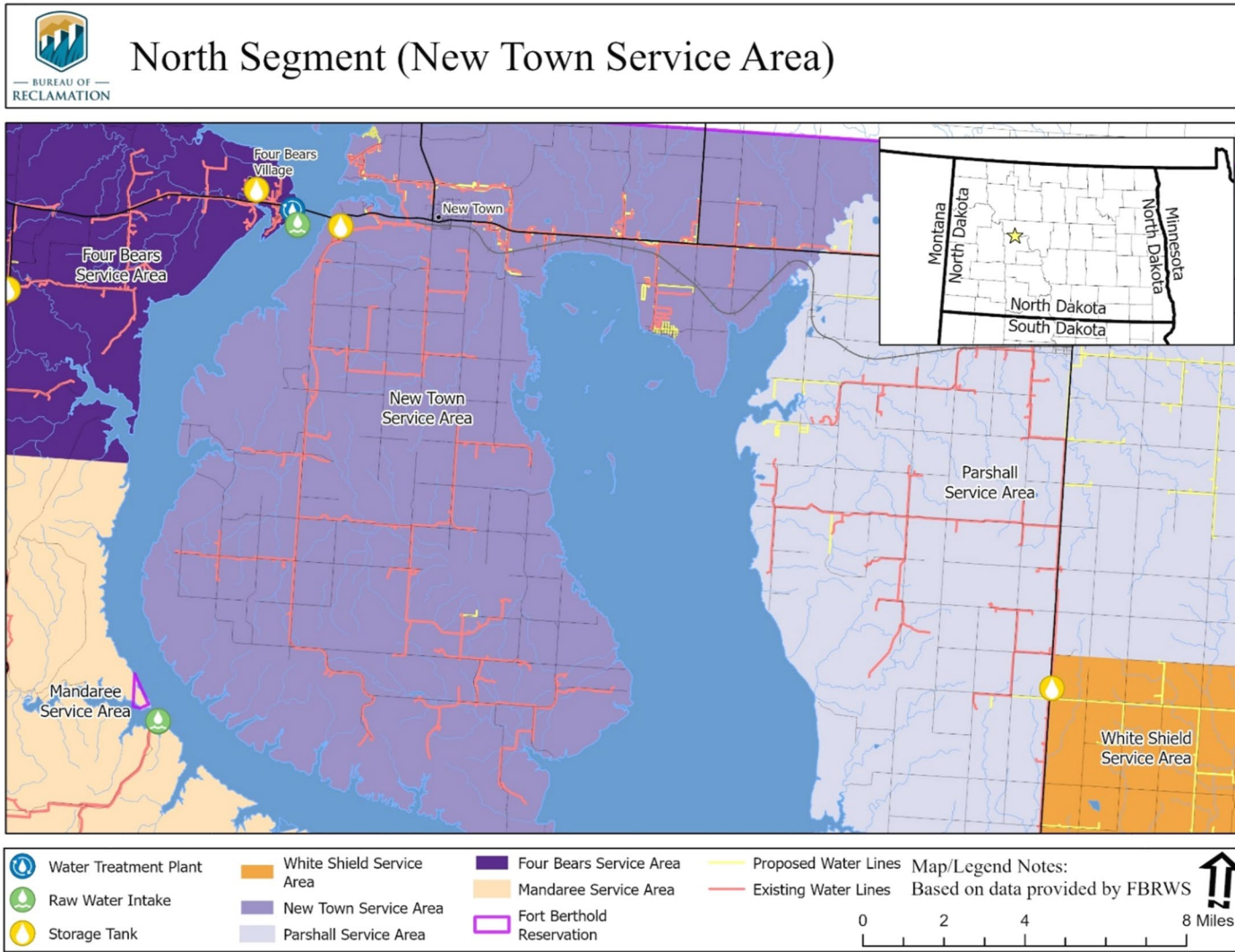


Figure 3. New Town Segment (North)



Northeast Segment (Parshall Service Area)

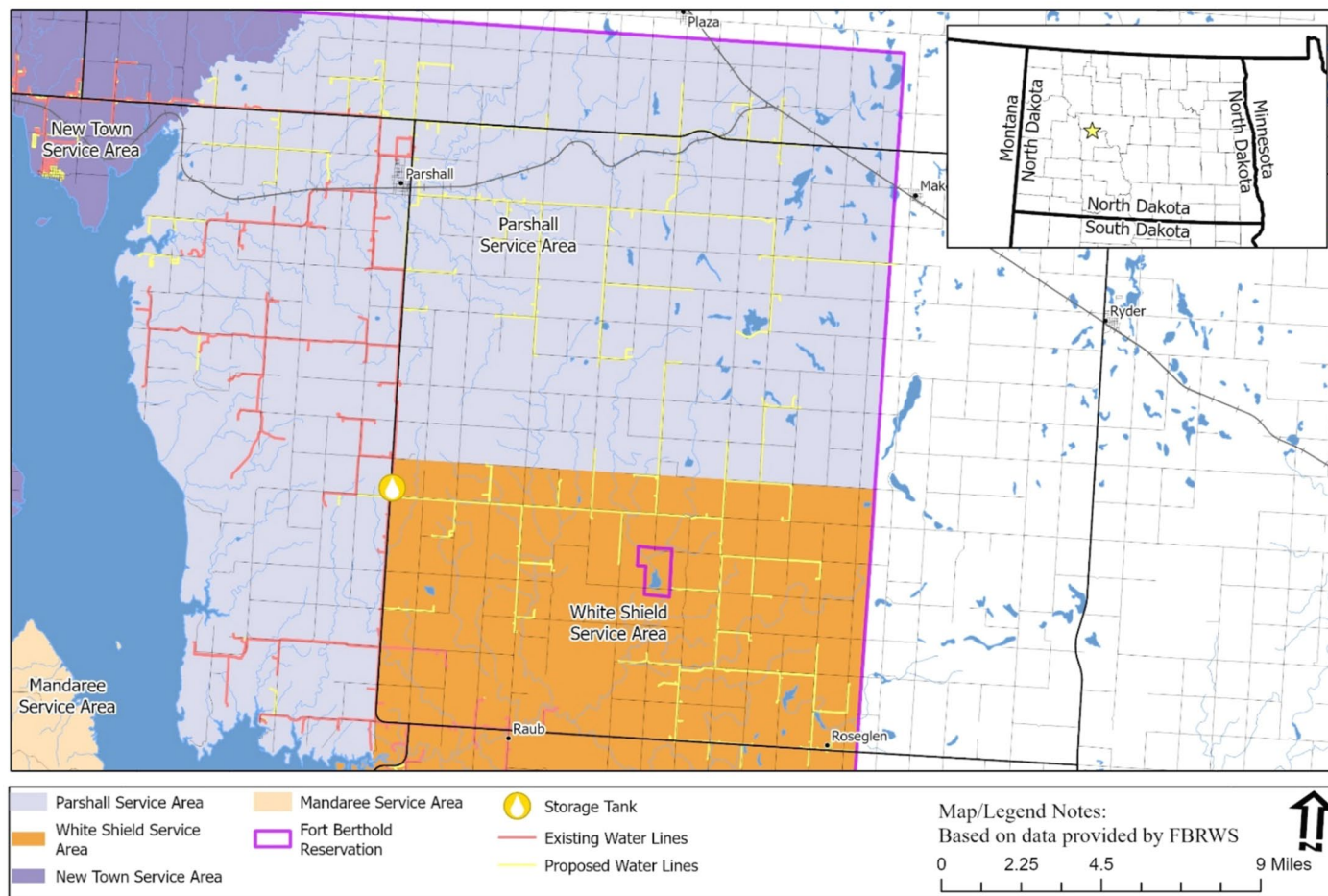


Figure 4. Parshall Segment (Northeast)

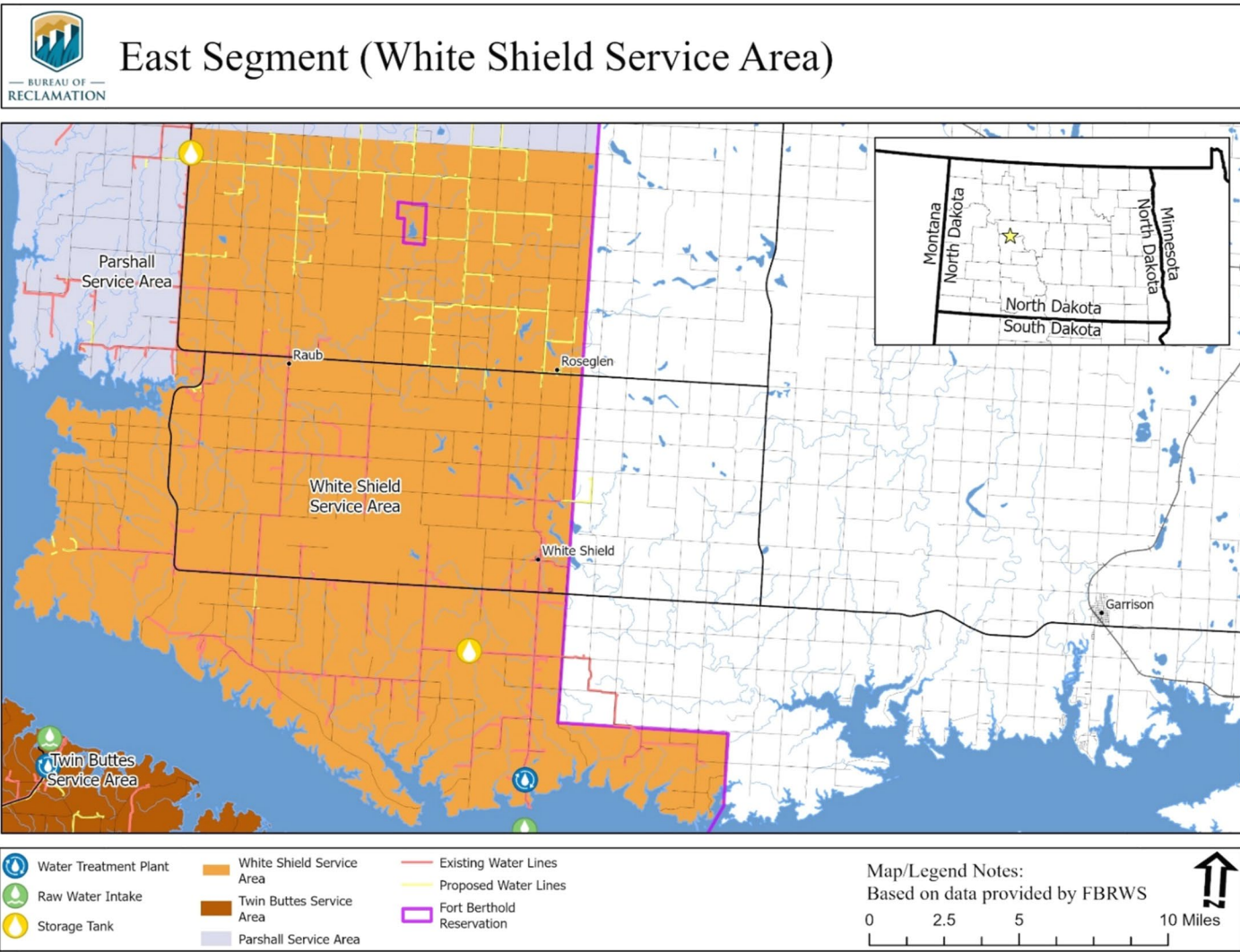


Figure 5. White Shield Segment (East)



South Segment (Twin Buttes Service Area)

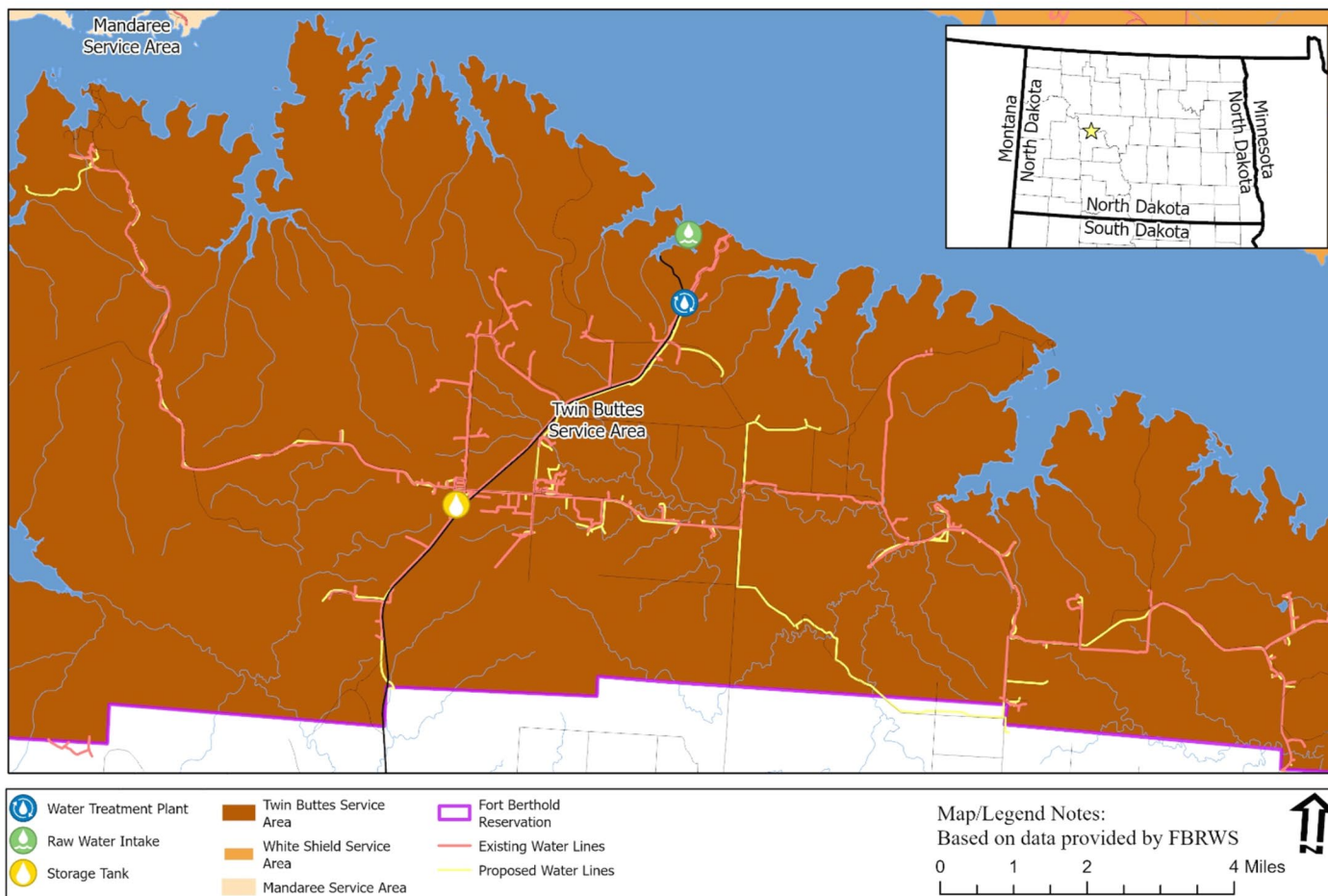


Figure 6. Twin Buttes Segment (South)

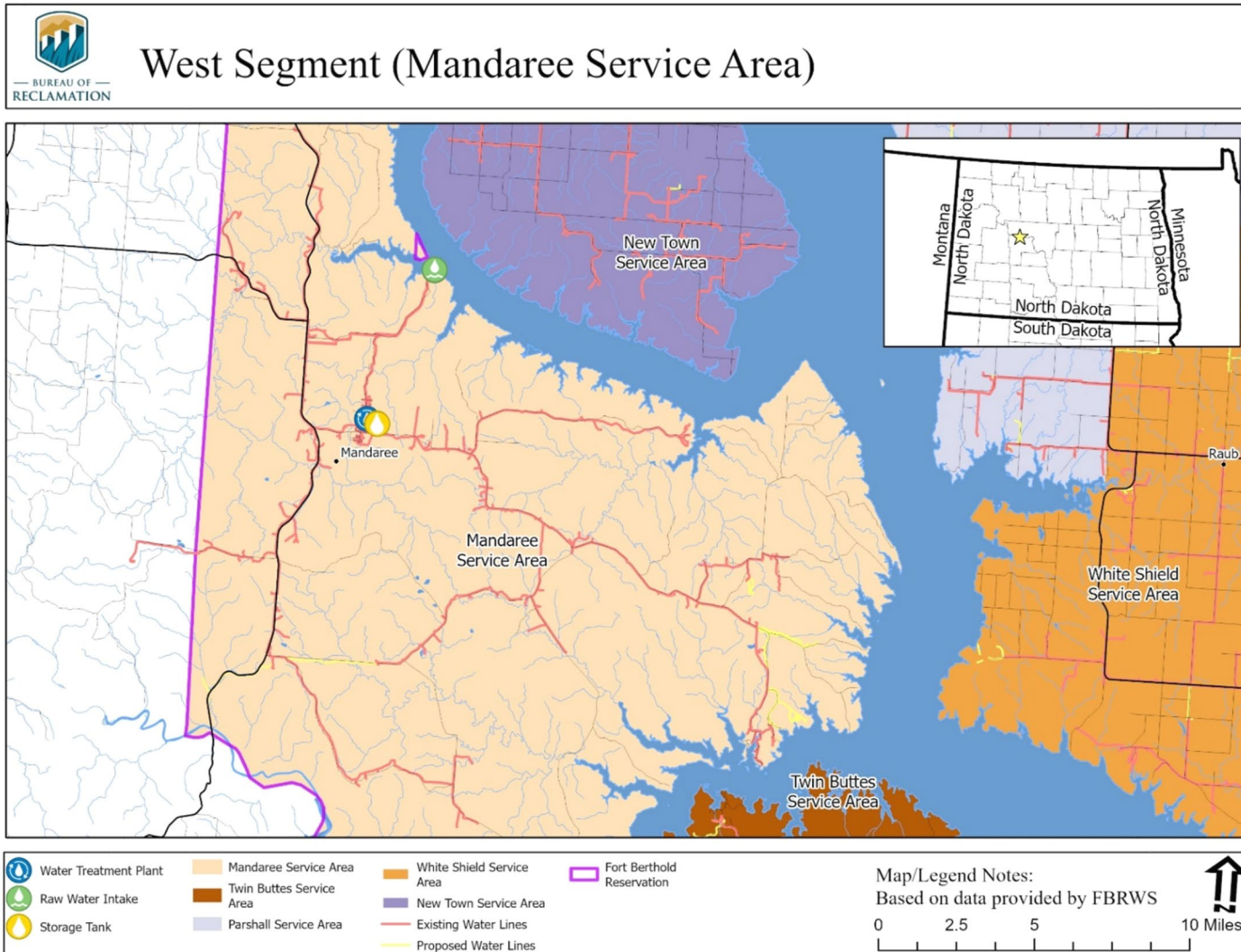


Figure 7. Mandaree Segment (West)

Additional FBRWS Activities

Table 4 provides a list of additional FBRWS construction-related projects and O&M activities that may not be specifically called out in the 2021 FBRWS Master Plan. These projects will be funded using future Bipartisan Infrastructure Law (BIL) Aging Infrastructure funding.

Table 4. Additional Construction, Replacement, Upgrades and O&M Activities

Other FBRWS Projects and O&M Activities	Description
Mandaree Intake Landslide Prevention, Intake Access Road Improvements, and water treatment plant Intake Slope Tube Protection Projects	A major landslide event at the Mandaree intake site occurred in the fall of 2019 and caused significant damage to the rip rap that protects the three intake slope tubes and the intake access road. These projects would install additional landslide prevention measures and repair the intake access road and rip rap protection over the intake slope tubes.
Subsequent User and System Improvements Project	The Subsequent User and System Improvements (SU&SI) project is a series of contracts which serves two purposes: the installation of water service connections and upgrades and additions to existing water system distribution systems, particularly in tribal communities. The location of these individual water service connects will be throughout the Reservation in the vicinity of the FBRWS distribution pipelines.
Other Routine O&M Activities	
On-Call O&M Services Contracts	FBRW has four on-call services contracts which they use to perform more complex repairs on the FBRWS. The on-call contracts include electrical, municipal, general O&M and Supervisory Control and Data Acquisition (SCADA). While the FBRW O&M program staff generally performs the day-to-day routine O&M activities there are water system repairs that require specialized experience, capability, or equipment that the existing FBRW O&M program cannot provide which is performed by these on-call services contractors.
Relocation of Existing FBRWS Pipelines and Appurtenances	The FBRWS has approximately 724 miles of installed pipelines. A substantial amount of that pipeline is installed parallel or crossing state, county, tribal roads. Oil industry development on the Reservation has created the need to improve the roads on the Reservation forcing FBRW to relocate existing pipelines to allow additional space to accommodate these road improvements.

Project Planning and Development

Through contracts and agreements, Reclamation has transferred operation and maintenance responsibilities to the Three Affiliated Tribes using the tribally established FBRW Department. FBRWS planning and development was originally established in the 2006 Engineering Report and was updated with the FBRWS 2021 Master Plan. The Three Affiliated Tribes has a consulting engineering firm under contract to assist in the design, advertising, awarding, and administering construction projects as identified in the Final Engineering Report and Master Plan. Reclamation provides FBRWS project oversight including approving all construction projects.

Reclamation and a qualified third-party contractor will provide site specific environmental compliance and inventories and surveys, as appropriate, for, threatened and endangered species, wetlands, migratory birds, cultural resources, and other resources during potential FBRWS project

development. Reclamation will review potential project locations, engineering designs and construction specifications, and construction contract administration.

Site Preparation

Site-specific site preparation will vary with each proposed activity. For larger ground-disturbing projects, construction footprints will be prepared to meet engineering specifications the FBRWS feature being constructed, replaced, or upgraded as generally described in **Appendix B**. Stockpile areas for the materials would be established within the construction footprint in the feature area or pipeline corridor (defined as a 50-foot-wide corridor centered on the proposed pipeline centerline). Erosion control structures would be installed throughout construction footprints prior to construction. Straw wattles, fiber mats, silt fences, or a combination of methods would also be used to control erosion as needed and modified as identified. Site specific surveys based on final design of a potential project area will be completed prior to construction. All construction contracts will include the listed environmental commitments, so contractors are aware of construction limits or special measures that need to be made to avoid impacts to cultural or resources. All construction site access will also be controlled to restrict public access.

Generally, heavy equipment, including scrapers and dozers, will be used to strip and remove vegetation (clearing and grub) from the soil surface and all topsoil will be stockpiled separately from subsoil. All equipment will be cleaned prior to entering construction sites to prevent potential introduction and spreading of noxious and other undesirable vegetation, as described in all construction contracts.

Specific BMPs would also be used in all wetlands, stream crossings, and in all heavily vegetated or woody areas. Wetlands will be avoided, where practicable, in all construction and O&M areas. Areas with jurisdictional wetlands, as defined in the CWA and USACE and EPA regulation, will follow requirements as outline in Nationwide Permit No. 57 or other application CWA permits. Tree removal will be avoided to the extent possible by either boring under heavily woody areas or adjusting alignments. If vegetation removal cannot be avoided, vegetation will only be removed between November 1 - March 31 and mitigated according to environmental commitments in **Table 15**. Also, vegetation clearing and grubbing in grassland areas will be limited during the ground-nesting period (May 1 - July 15). If any vegetation clearing and grubbing needs to occur during these nesting periods, surveys would be conducted by a qualified biologist and all areas with nesting birds will be avoided until after the nesting season. Construction activities during these time periods would only be allowed to proceed within five days a completed nesting survey. Additional restrictions for active raptor nests in areas adjacent to construction sites will be implemented, as applicable. Appropriate buffers, based on individual species requirements, would be incorporated, as described in the environmental commitments section of the PEA. Additional consultation with the U.S. Fish and Wildlife Service (USFWS) and the Three Affiliated Tribes Fish and Wildlife Division and/or North Dakota Game and Fish Department.

Construction Activities

Construction activities at each site will vary depending on the scope of each individual proposed Phase III FBRWS activity. Generally, exposed subsoil in the construction footprint would be graded to a level surface using heavy equipment. Excess subsoil not suitable for site restoration would be wasted (spread) in active disturbed areas, or otherwise disposed of, and overdressed with topsoil and seeded following *Site Reclamation* discussed below. All newly constructed features and facilities will be added to the areas operated and maintained by the FBRWS under the existing O&M contract with Reclamation.

Utility Installation

Phase III FBRWS features will have a variety of utility service needs. With the exception of water service, which is provided by FBRW, all other utilities will be provided by local electric cooperatives or internet providers. Generally, all existing project features replaced or upgraded in FBRWS Phase III already have adequate utilities so no additional ground disturbing activities are anticipated. However, for new features, additional overhead or buried utility services are expected. FBRWS Phase III activities may require additional site reviews for potential effects to environmental and cultural resources. Utility work may include vegetation clearing, grubbing, stripping and stockpiling topsoil. Linear utility trenches would be excavated to have 7.5 feet of cover over installed pipelines and 4 feet for the underground electrical lines. The maximum length of open trench would be limited to 300 feet at one time and all trenches would be backfilled the same day they are excavated. Pipelines would be bored in heavily vegetated woody area, if practicable, to avoid disturbances. All topsoil would be stockpiled as previously described and replaced after placement of suitable backfill and pipe bedding materials. Topsoil will be spread evenly to approximate original contours as described below in *Site Reclamation*.

Site Reclamation

Pipelines, utility corridors, and portions of the facility construction sites will be reclaimed after construction in accordance with the respective construction contract. Disturbed areas will be regraded back to their original ground level, re-topsoiled, and re-seeded preferably with a native plant seeding for long-term establishment. Reclaimed areas would be monitored during operation to document vegetation establishment. If vegetation does not successfully colonize the disturbed area, the area would be reseeded or soil amendments (e.g. fertilizer) would be added to facilitate successful vegetation growth.

Operation

All Phase III FBRWS activities, whether new construction, replacement, or upgraded features and facilities, will be operated in accordance with the existing P.L. 93-638 O&M contract between the Three Affiliated Tribes and the Bureau of Reclamation. O&M activities for all current and future FBRWS facilities are generally associated with the production and delivery of potable drinking water within the Fort Berthold Reservation and are further described in **Appendix B**.

Maintenance, Repair, and Replacement

All Phase III FBRWS features and facilities whether new, replaced or upgraded, will be maintained, repaired, and replaced in accordance with the existing P.L. 93-638 O&M contract between the Three Affiliated Tribes and the Bureau of Reclamation. Maintenance, repair, and replacement activities would typically include upkeep of buildings, facilities and associated properties including parking facilities, grounds maintenance, mowing around the facilities, repairing pipeline leaks, and other routine activities listed in **Appendix B**.

Repair of pipe leaks would be considered routine if work is within prior disturbed areas in existing pipeline easements and/or rights of way. Any repair work outside these areas may require additional site assessments and surveys as outlined in the Environmental Commitments Section of this PEA. All Environmental Commitments will be followed during all maintenance and construction activities.

FBRWS Phase III Construction

Timeframes

Following standard construction practices for similar type projects, earthwork for the construction activities would begin in the spring after the spring thaw and continue until freeze up (approximately November). If environmental clearances allow, construction may occur on certain projects during the winter months. It is estimated that implementation of FBRWS Phase III would take up to 10 years to complete. However, FBRW will continue to add new water service connections into the foreseeable future as new housing or businesses is developed as discussed below.

Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions include those federal and non-federal activities not yet undertaken, but sufficiently likely to occur, that a Responsible Official of ordinary prudence would take such activities into account. Reasonably foreseeable future actions do not include those actions that are highly speculative or indefinite (43 CFR 46.30). Continued oil development, residential development, irrigation improvements, electrical grid developments are all reasonably certain to continue to occur on the Fort Berthold Reservation but are subject to approval from other permitting agencies (Three Affiliated Tribes, BIA, etc.).

The scope of the Phase III would be limited if the Tribe is unable to secure a construction ceiling increase. This would affect most of the proposed projects included the FBRWS 2021 Master Plan. Implementation of Phase III projects would then be limited to existing funded projects associated with BIL Aging Infrastructure, future Reclamation RAX funding or FBRWS improvements funded by other federal agencies such as the IHS or the EPA. **Table 6** includes a sample of reasonably foreseeable future actions identified in the 2021 FBRWS Master Plan.

Table 5. Reasonably Foreseeable Future Actions

Reasonably Foreseeable Future Actions by FBRW
New Town Emergency Operations Center Water Service Connection
Four Bears BIA Subdivision
Four Bears Casino Hotel Addition
Bakersfield East Housing Project
West Bakersfield Housing Area Water Meter Installation
FBRWS Temporary Intake Industrial Water Sales
Parshall Deep Water Bay Temporary Intake
Mandaree Community Master Plan Development
Twin Buttes Community Master Plan Development

Geographic Scope

For the cumulative impact analysis, Reclamation is evaluating a geographic scope that includes the proposed Phase III FBRWS projects and associated O&M activities located within the external boundaries on the Fort Berthold Reservation. However, on rare occasions FBRWS infrastructure may be installed immediately outside the Fort Berthold Reservation in cooperation with adjacent rural water systems.

The construction footprint for any of the proposed specific projects will vary in size. The proposed new administration and O&M shop building and Mandaree WTP will have a footprint of 10 to 20 acres while a new tank will require less than five (5) acres. The construction right-of-way (ROW) for the pipeline distribution system and service lines will typically require a width of 50 feet. Ground disturbance activities would be confined to the limits of the temporary construction easement and permanent ROW. A permanent easement of 25 feet on either side of the as-installed pipeline is typically acquired for O&M and replacement, as well as access to the pipeline from existing roadways.

Chapter 3: Affected Environment and Environmental Consequences

Introduction

This section describes the existing conditions and potential environmental consequences associated with implementing the Proposed Action. The affected environment includes a description of resources in the Project Area, including potentially affected communities, land, water, and air-sheds that might be affected by the Proposed Action. Environmental consequences may be direct (resulting from construction, operation, or maintenance) or indirect (subsequent to a direct effect but not directly resulting from the Proposed Action), positive (beneficial) or negative (adverse), and long term (permanent, long-lasting) or short term (temporary). A summary of the temporary and permanent impacts that could occur from the Proposed Action are presented in **Table 12**. Environmental commitments would be implemented to reduce, minimize, or eliminate impacts and are discussed for each resource and summarized in **Table 15** in the Environmental Commitments and are an inseparable part of the Proposed Action.

Areas of potential impacts are resource-specific and defined for each individual resource. The boundary of the affected area extends to where effects can be reasonably and meaningfully measured. Direct effects generally occur within the project area. However, some impacts may occur on a broader scale, encompassing areas beyond the Project Area. Direct and indirect impacts are disclosed as environmental impacts of section of each resource.

Evaluation of potentially affected resources and environmental impacts associated with implement of Phase III activities are focused on the resources: Surface Waters, Endangered Species, Land Resources, Cultural Resources, Paleontology, Wildlife and Fisheries, Air Quality, Socioeconomics, Climate Change, Indian Trust Assets, and Environmental Justice.

Surface Water

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act (CWA) of 1977, provides the authority to the Environmental Protection Agency (EPA) and United States Army Corps of Engineers (the Corps) to establish water quality standards, control discharges into surface waters, develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged or fill material (Section 404). Within the Reservation, the Missouri River/Lake Sakakawea is considered a navigable waterway, and is therefore also subject to Section 10 of the Rivers and Harbors Act of 1899.

Executive Order (EO) 11990 issued on May 24, 1977 (aka No Net Loss of Wetlands) requires each Federal agency to provide leadership and guidance to minimize the loss and degradation of wetlands. In addition, each agency must avoid undertaking new construction within wetlands unless there are extenuating circumstances (Section 2 (a)) and each agency must provide public review of any proposals of construction within wetlands (Section 2 (b)). Corps CWA Nationwide Permit No. 58 (<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/16849>) can be used for most utility line activities for water and other substances. Preconstruction notification is required prior to commencing the activity if a Section 10 permit is required or the discharge will result in the loss of greater than 1/10-acre of Water of the U.S., as defined by the final rule issued by the EPA and Corps on August 23, 2023. The final rule can be viewed at:

Affected Environment

Surface water resources within Fort Berthold Reservation includes the Missouri River, which is the sole provider of the raw water for the FBRWS. Other major streams within Fort Berthold Reservation include Bear Den Creek, Shell Creek, East Fork Shell Creek, Deepwater Creek, Moccasin Creek, and Squaw Creek (USGS 1998).

Lake Sakakawea

The Lake Sakakawea reservoir is part of a six-reservoir system on the Missouri River, operated as an integrated system by the Corps. The Flood Control Act of 1944, later named the Pick-Sloan Missouri Basin Program authorized the reservoirs for flood control, navigation, irrigation, and hydropower. Lake Sakakawea has the largest storage capacity of the reservoirs at approximately 23.5 million acre-feet (MAF), which is one-third of the total storage capacity in the main stem system (Corps 2011). By comparison, a standard Olympic size swimming pool contains about two acre-feet of water (660,430 gallons or 2,500,000 liters).

The U.S. Army Corps of Engineers began the construction of Garrison Dam in Riverdale North Dakota in 1946 and reached its completion and closure in 1955. The construction of Garrison Dam and the resulting formation of Lake Sakakawea required the U.S. Government to purchase 152,360 acres of river bottom lands through the center of the Fort Berthold Reservation. In 1947, the Tribal Chairman signed settlement for \$5,105,625 or approximately \$33/acre for severance damages. Relocation of the communities of Elbowoods, Red Butte, Lucky Mound, Nishu, Beaver Creek, Independence, Shell Creek, and Charging Eagle, were completed by 1954. Roads and highways were re-routed, schools, churches, and cemeteries were relocated. The central business community including the Tribal Headquarters and the Four Bears Bridge were relocated from the original locations in Elbowoods to New Town (Lawson 1983).

The immense loss of natural resources provided by the river bottom lands included 94% of the productive agricultural lands, timber for homes, livestock shelters and corrals, natural food sources, and wildlife habitat. The social and economic damages resulting from uprooting communities and scattering families across the remaining uplands on suitable home sites impacted generations and permanently reshaped Fort Berthold Reservation.

Lake Sakakawea (referred to as the Lake) has long been the recognized preferred source of water for a Fort Berthold Reservation-wide water supply and distribution project (Bartlett & West 2006; p. 69). Inflows into the Lake can vary depending on snowfall condition within the Missouri River Basin in Montana. Historical fluctuations of the Lake have not been significant from a water supply perspective, and past management of the Lake levels by the Corps makes the Lake a dependable supply source for water for the FBRWS.

FBRWS intakes on Lake Sakakawea are authorized by Congress, regulated by Corps, and owned by Reclamation. However, water rights are considered an Indian Trust Asset and are discussed further in that section of this PEA.

Operation of the Garrison Dam/Lake Sakakawea Project follows an annual cycle and is dictated by the Garrison Dam Water Control Manual in combination with the Mainstem Master Water Control Manual. The average annual volume of water that enters the lake is 16.6 million acre-feet (MAF) and the average annual volume of the lake is 18.5 MAF. Based on these averages, it takes slightly more

than one year for the water to pass through the Lake (USGS 1996). Typically, water levels, and subsequent storage, are lowest during the winter months to prepare for spring flooding, when water levels are highest. The desired operating storage is around 22.5 MAF, leaving 1.5 MAF of storage exclusively for flood control. Water stored above 22.5 MAF is typically released by March 1 (**Table 6**)

Table 6. Garrison Reservoir Storage Space Allocations

Storage Designation (Zone)	Elevation in feet		Storage Space in AF
	From	To	
Exclusive Flood Control	1850.0	1854.0	1,495,000
Annual Flood Control and Multiple Use	1837.5	1850.0	4,211,000
Carryover Multiple Use	1775.0	1837.5	12,951,000
Permanent	1673.0	1775.0	4,794,000
Total Storage			23,451,000

Note: Storage volumes are based on August 2013 elevation-area-capacity tables (2010-2021 survey data) (Master Water Control Manual- Missouri River Basin, Corps 2018)

Environmental Effects of the Proposed Action

Construction of upland terrestrial projects would result in disturbance to soils and vegetation on uplands adjacent to Lake Sakakawea and other wetlands, which would have the potential to release sediment into upland drainages leading to surface waters. Ground disturbance would be short term and temporary during construction. Existing raw water pipelines would be decommissioned and abandoned in place. Installation of raw water delivery support infrastructure would follow Reclamation's Environmental Commitments related to surface water resources as described in **Table 15**.

Woody draws crossed by any pipeline would be bored where feasible. Near Lake Sakakawea, erosion control structures including, but not limited to, straw waddles, fiber mats, silt fences, or a combination of methods would be used during soil moving activities to prevent sediment migration to the Lake. These structures would be maintained until any disturbed area has been reclaimed and stabilized with native vegetation.

The Proposed Action (current and future operations of the FBRWS) would have insignificant long-term effect of surface water depletions from Lake Sakakawea. The Proposed Action would result in annual depletions of approximately 4,100 acre-feet/year. This includes the depletions associated with the four existing WTPs and lake withdrawals for industrial water sales. In the context of Lake Sakakawea storage capacity of 23.5 million acre-feet, the maximum depletion of 4,100 acre-feet/year would be about 0.017 percent of the total storage. Annual depletion at this level would not inhibit operations of the Garrison Dam/Lake Sakakawea or cause other significant effects to surface water resources in the Action area.

The Proposed Action would incrementally contribute to cumulative water depletions from Lake Sakakawea. Due to the large storage capacity of the Lake, combined with the very small annual depletion, cumulative effects as a result of the Proposed Action would be insignificant and discountable. Several depletion analyses conducted since 2005 evaluated existing and reasonably foreseeable withdrawals by municipal, rural, and irrigation intakes in the Missouri River basin. These studies concluded that proposed projects withdrawing up to 80,000 acre-feet/year from Lake Sakakawea (25 times more than the FBRWS) would have no significant effects on Missouri River flows or reservoir levels (Corps of Engineers 2006, 2013).

The Proposed Action has the potential to contribute to water quality degradation through construction disturbances, sedimentation, potential fuel or harmful leaks or spills. With the implementation of industry standard Environmental Commitments listed in **Table 15**, any direct, indirect, or cumulative impacts to water quality would be temporary and preventable.

With the implementation of surface water environmental commitments, combined with the relatively small depletion from Lake Sakakawea for water intakes, no direct, indirect, or cumulative impacts to surface water resources would occur as a result of the Proposed Action Alternative.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Phase III FBRWS projects would not be constructed and the existing FBRWS facilities would be operated and maintained as currently identified in the existing P.L. 93-638 O&M contract between the Three Affiliated Tribes and the Bureau of Reclamation, with annual water depletion of approximately 3,100 acre-feet/year from Lake Sakakawea.

Wildlife and Fisheries

Fort Berthold Reservation covers two primary landscape conditions and resulting wildlife habitats found in North Dakota. The Missouri Slope landscape is an unglaciated region occupying the rolling plains, sandstone outcroppings, and badlands formations that exist southwest of the Missouri River and Lake Sakakawea. Within the Fort Berthold Reservation, this landscape arises within the areas of Mandaree, New Town, and Twin Buttes. The other is the Missouri Coteau, which marks the boundary of the southwestern advancement of glaciation in North Dakota. An outstanding feature of the Missouri Coteau is the high concentration of wetlands and alkaline lakes in the region (NDGF 2015). The eastern half of Fort Berthold Reservation and the towns of White Shield, Parshall, and Roseglen exhibit this landcover and resulting habitats.

These two landcover types and the characteristic species occupying these habitats were utilized to determine species which potentially occupy Fort Berthold Reservation.

Affected Environment

Birds

Several upland game species are common to Fort Berthold Reservation and have designated hunting seasons including sharp tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicus*), mourning dove (*Zenaidura macroura*), wild turkey (*Meleagris gallopavo*), and Hungarian partridge (*Perdix perdix*). These species typically inhabit upland grasses near developed agricultural fields, shelter belts, and roadside ditches in both the Missouri Slope and Coteau regions within Fort Berthold Reservation.

Shorebirds common to the Missouri Slope include killdeer (*Charadrius vociferus*), upland sandpiper (*Bartramia longicauda*), marbled godwit (*Limosa fedoa*), long-billed curlew (*Numenius americanus*), Wilsons phalarope (*Phalaropus tricolor*), and spotted sandpiper (*Actitis macularius*). Within Fort Berthold Reservation these species occupy the shorelines of Lake Sakakawea, isolated wetlands, and semi-permanent streams. Shorebirds up on the Missouri Coteau include American bittern (*Botaurus lentiginosus*), willet (*Tringa semipalmata*), franklins gull (*Leucophaeus pipixcan*), black tern (*Chlidonias niger*), and sedge wren (*Cistothorus stellaris*).

Migratory birds primarily include waterfowl and waterbirds and may either breed or migrate through Fort Berthold Reservation in the spring and fall. Characteristic waterfowl species of the Missouri Slope include northern pintail (*Anas acuta*), mallard (*Anas platyrhynchos*), blue-winged teal (*Spatula*

discors), Northern shoveler (*Spatula clypeata*), and gadwall (*Mareca strepera*). Migratory species known to occupy the Coteau include American wigeon (*Mareca americana*), green-winged teal (*Anas crecca*), lesser scaup (*Aythya affinis*), greater scaup (*Aythya marila*), bufflehead (*Bucephala albeola*), canvasback (*Aythya valisineria*), and redhead (*Aythya americana*).

Raptors and eagles known to occupy the Missouri Slope and Coteau regions include red tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), ferruginous hawk (*Buteo regalis*), swainsons hawk (*Buteo swainsoni*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), merlin (*Falco columbarius*), and prairie falcon (*Falco mexicanus*).

Grassland birds found in the Missouri Slope and Coteau regions include spragues pipit (*Anthus spragueii*), eastern kingbird (*Tyrannus tyrannus*), horned lark (*Eremophila alpestris*), eastern bluebird (*Sialia sialis*), American crow (*Corvus brachyrhynchos*), common yellowthroat (*Geothlypis trichas*), clay-colored sparrow (*Spizella pallida*), vesper sparrow (*Pooecetes gramineus*), Western meadowlark (*Sturnella neglecta*), bobolink (*Dolichonyx oryzivorus*), chestnut-collard long spur (*Calcarius ornatus*), and brown-headed cowbird (*Molothrus ater*).

Mammals

Large game animals known to exist within Fort Berthold Reservation include pronghorn (*Antilocapra americana*), white tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), moose (*Alces alces*), and elk (*Cervus canadensis*). Other furbearers include beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), mink (*Neovison vison*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), weasel species (Genus *Mustela*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), American badger (*Taxidea taxus*), and mountain lions (*Puma concolor*).

Non-game mammals found up on the Coteau include white-tailed jackrabbit (*Lepus townsendii*), snowshoe hare (*Lepus americanus*), thirteen-lines ground squirrel (*Ictidomys tridecemlineatus*), Northern pocket gopher (*Thomomys talpoides*), grasshopper mouse (*Onychomys leucogaster*), and jumping prairie mouse (*Zapus hudsonius*). Arid conditions and a higher percentage of grazing within the Missouri Slope offers habitat for the black-tailed prairie dog (*Cynomys ludovicianus*), swift fox (*Vulpes velox*), sagebrush vole (*Lemmys curtatus*), merriams shrew (*Sorex merriami*), and the Northern grasshopper mouse (*Onychomys leucogaster*).

Reptiles and Amphibians

The Missouri Coteau offers plentiful wetlands and riparian habitats which support a surprisingly wide variety of reptiles and amphibians such as toads, frogs, and snakes including the great plains toad (*Anaxyrus cognatus*), Woodhouse's toad (*Anaxyrus woodhousii*), Northern leopard frog (*Lithobates pipiens*), boreal chorus frog (*Pseudacris maculata*), various tiger salamander species (*Ambystoma* genus), plains gardner snake (*Thamnophis radix*), Eastern yellow-bellied racer (*Coluber constrictor*), and bullsnake (*Pituophis catenifer sayi*). The more arid habitats offered in areas of the Missouri Slope offer resources for the prairie rattlesnake (*Crotalus viridis*), plains spadefoot (*Spea bombifrons*), short-horned lizard (*Phrynosoma hernandesi*), sagebrush lizard (*Sceloporus graciosus*), smooth green snake (*Opheodrys vernalis*), and plains hog-nosed snake (*Heterodon nasicus*) (NDGF 2015).

Fisheries

Lake Sakakawea is the dominant water body within Fort Berthold Reservation and is known as one of the top fisheries in the state of North Dakota. Common fish species known to Lake Sakakawea include the walleye (*Sander vitreus*), northern pike (*Esox lucius*), sauger (*Sander canadensis*), white bass (*Morone chrysops*), freshwater drum (*Aplodinotus grunniens*), channel catfish (*Ictalurus punctatus*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and chinook salmon (*Oncorhynchus tshawytscha*). Perennial streams and wetlands within the interior of Fort Berthold Reservation offer several prolific

minnow species which provide stable food sources for many birds and mammals. The fathead minnow (*Pimephales promelas*), northern redbelly dace (*Chrosomus eos*), creek chub (*Semotilus atromaculatus*), and brook stickleback (*Culaea inconstans*) are common to prairie streams in North Dakota. The presence of minnows is a primary indicator of a healthy ecosystem (NDGF 2021).

Environmental Effects of the Proposed Action

Birds

Direct impacts to gamebirds and migratory bird species such as those identified above may result from vehicle collisions, human disturbance, or loss of habitat. Construction of any potential project would avoid disturbing sensitive areas such as wetlands, woody draws, or intermittent drainages. Therefore, impacts to wetland and waterbirds would largely be negligible while impacts to upland gamebirds would be temporary disturbances such as flushing into adjacent habitats.

Permanent conversion of habitat from agricultural fields or grasslands to above ground infrastructure such as buildings, access roads, and gravel parking areas have the potential to result in a net loss of suitable habitat for gamebirds and grassland birds. In addition, some species are sensitive to landscape level impacts from fragmentation and the resulting loss of connectivity of habitat patches. To reduce fragmentation, potential linear projects such as water service lines would preferably be located in previously disturbed areas along established roads or driveways. Reclamation efforts of the temporary construction ROW would be completed as soon as possible to avoid the spread and invasion of noxious weeds.

Due to the underground nature of water service line construction, the majority of the disturbance resulting from the Proposed Action would be temporary. Migratory Bird Treaty Act Environmental Commitments are listed in **Table 15**.

Direct impacts to raptors and eagles could occur from disturbance or nest abandonment resulting from construction and human presence. Many raptors including ferruginous hawks, golden eagles, and rough legged hawks (*Buteo lagopus*) are known to be particularly sensitive to human disturbance during nesting season. Nest abandonment can occur from persistent noise or a clear line-of sight of the activity. Flushing raptors or eagles from active nesting sites during inclement weather is known to contribute to increased mortality.

The exposed bluffs along Lake Sakakawea offer excellent golden eagle nesting habitat and there are many known historical nesting sites within Fort Berthold Reservation. Potential project development would include a cursory review of any available data on locations of bald and golden nesting sites. Bald and Golden Eagle Protection Act Environmental commitments are listed in **Table 15**.

Mammals

Direct impacts to large game include loss from increased vehicle collisions, displacement due to increased disturbance, and loss of habitat. Large game such as white-tailed deer rely on habitat cover of the Missouri Coteau such as woody draws, sloughs, and grasslands typically near croplands or woody shrublands suitable for browsing type food sources. Mule deer often occupy rougher country within the Missouri Slope such as badland and open butte landscapes. Pronghorn are found in both regions, occupying harvested agricultural fields and short-grass prairie, although they are more common within the Missouri Slope region. Existing and continuing fragmentation of suitable large game habitat within the Fort Berthold Reservation is occurring. Displacement of large game is likely to increase due to loss of habitat suitability from vehicle traffic and human occupation. Loss of winter cover due to grassland conversion to agricultural uses is also increasing. The Proposed Action would result in the temporary loss of use of these habitats during construction.

Direct impacts to small non-game mammals includes temporary habitat loss and disturbance of suitable habitats in grasslands and uplands. Direct mortality, displacement, or movements of resident individuals into adjacent habitats may increase exposure to harms such as increased predation or mortality from vehicular traffic.

Reptiles and Amphibians

Direct impacts to amphibians would be limited to disturbances to aquatic or semi-aquatic environments. Wetlands, creek bottoms, and marsh areas provide habitat for amphibians within the Action area. Impacts to these aquatic habitats may occur from habitat degradation such as temporary disturbances, sedimentation, or contamination from harmful chemicals. The Proposed Action would avoid wetlands during development of potential projects and utilize industry standard BMPs to reduce erosion and sedimentation during construction and reclamation.

Direct impacts to reptiles and snakes include losses from temporary surface disturbances of suitable habitats such as arid grasslands and uplands. Mortality, displacement, or movements of resident individuals into adjacent habitats may increase exposure to harms such as increased predation or mortality from vehicular traffic. After construction, the habitats would once again become available to these species. Permanent upland habitat conversion would be required for potential projects such as access roads, water treatment facilities, and water storage tanks. Development of these projects would result in a net loss of available habitats for these species. Although rarely seen and uncommon in some areas, the reptilian and amphibian populations known to exist on Fort Berthold Reservation are unlikely to be impacted to a level of concern from the Proposed Action.

Fisheries

Direct impacts to fisheries would be limited to work on existing and potential new water intakes within Sakakawea. Fish species can become impinged or entrapped within water intakes. Harmful chemicals or fuels used for water pumps can contaminate water quality. Construction on the shorelines or within the water can cause sedimentation of gravel spawning beds and reduce water clarity. Other aquatic sources such as perennial streams and wetlands provide habitat for approximately 30 species of minnows found in North Dakota. Similar to impacts to amphibians, aquatic habitats may be impacted by habitat degradation from sedimentation or contamination from harmful chemicals. The Proposed Action would avoid disturbance to wetlands and utilize industry standard BMPs such as silt curtains, straw wattles, and silt fences during potential project construction within or next to Lake Sakakawea.

Environmental Effects of the No Action

Under the No Action Alternative, FBRWS Phase III would not be constructed and additional impacts to wildlife and fisheries would not occur.

Threatened and Endangered Species

This section constitutes the Biological Assessment for the Proposed Action as required under Section 7(c) of the Endangered Species Act of 1973, as amended, in compliance with regulations found at *50 CFR Part 402 Interagency Cooperation – Endangered Species Act of 1973, as Amended*.

In addition to the individual species reviews provided in this section, Reclamation has incorporated the Dakota skipper Habitat Suitability Model (HSM) and Revised Desktop Screening Approach described within the Bureau of Indian Affairs 2021 Programmatic Biological Assessment and Biological Evaluation: Second Addendum (BIA 2021). As Interior Bureaus, both Reclamation and

the BIA are encouraged to reduce duplicative efforts and share information across agencies. The BIA transferred the HSM model geodatabase to Reclamation on October 5, 2023.

Reclamation intends to incorporate the BIA Revised Desktop Screening Approach utilizing the HSM for Dakota skipper described in the 2021 document by reference using 50 CFR § 402.12 (g) Biological Assessments. The section states:

“If a proposed action requiring the preparation of a biological assessment is identical, or very similar, to a previous action for which a biological assessment was prepared, the Federal agency may fulfill the biological assessment requirement for the proposed action by incorporating by reference the earlier biological assessment, plus any supporting data from other documents that are pertinent to the consultation, into a written certification that:

- 1) The proposed action involves similar impacts to the same species in the same geographic area;
- 2) No new species have been listed or proposed or no new critical habitat designated or proposed for the action area; and
- 3) The biological assessment has been supplemented with any relevant changes in information.

Reclamation utilized the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website on July 17, 2023, for a list of endangered, threatened, or proposed species or designated critical habitat within the action area or the entire Fort Berthold Reservation (Action Area). The official species list was obtained from USFWS for species that may occur within McLean, Mountrail, Dunn, McKenzie, Mercer, and Ward Counties and are shown in **Table 7**.

Table 7. Federally Listed, Proposed and Candidate Resources within the Action Area

Source: USFWS 2023

Species/Critical Habitat	Status	Designated Critical Habitat
Whooping Crane (<i>Grus americana</i>)	Endangered	X
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	Endangered	X
Piping Plover (<i>Charadrius melodus</i>)	Threatened	Yes
Dakota Skipper (<i>Hesperia dacotae</i>)	Threatened	X
Rufa Red Knot (<i>Calidris canutus rufa</i>)	Threatened	X
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Endangered	X
Monarch (<i>Danaus plexippus</i>)	Candidate	X

Affected Environment by Species

Piping Plover

Piping plovers are about 7 inches in length and have a sand-colored upper body, and white underside. Breeding birds have a single black breastband, a black bar across the forehead, bright orange legs and bill, and a black tip on the bill. In the winter, piping plovers lose the black band, legs become a pale yellow, and the bill is mostly black.



Source: <https://www.fws.gov/midwest/endangered/pipingplover/pipingpl.html>

Population Range-wide

Three sub-populations of piping plover have been identified: an interior Great Plains population, Atlantic Coast population, and a Great Lakes population. The piping plover was listed as threatened in 1985 (*Federal Register* 50:50726-50734). The breeding range includes Alberta, Saskatchewan, Manitoba, Montana, North Dakota, Minnesota, South Dakota, Nebraska, and Iowa. Wintering locations includes the Atlantic Coast from North Carolina south to Florida and on the Gulf of Mexico from Florida to Texas; northern Cuba, Puerto Rico, Bahamas, Greater Antilles, eastern Mexico, and the Yucatan Peninsula. The piping plover numbers have declined due to dams and channelization, reducing suitable habitat. In 2011, the adult population of piping plovers was estimated at approximately 5,723, with 2,249 estimated in the Northern Great Plains (Elliott-Smith et al. 2015). The USFWS designated critical habitat for the Great Plains breeding population in 2002 (*Federal Register* 67:57637-57717).

Human recreation disturbance and the destruction, modification, and loss of habitat have been identified as threats to piping plovers in both their breeding and wintering ranges. According to the most recent 5-year review (USFWS 2020), the considerable efforts in breeding population surveys over the past decades, has yet to produce a reliable estimation of the abundance of the Northern Great Plains population. As a result, it is currently unknown if recovery criterion has been met as of March 2020.

Designated Critical Habitat

Within Fort Berthold Reservation designated critical habitat for piping plovers includes Lake Sakakawea and the shorelines up to el. 1854. Critical characteristics of suitable nesting habitat include sparsely vegetated beaches and shorelines, islands of base sand and gravel incorporated with nearby shallow wet sand areas suitable for insect foraging. Critical habitat does not include developed areas such as buildings, boat ramps, bank stabilizations, agricultural areas, or steep banks which do not provide suitable nesting habitat.

Action Area

Piping plover nesting and foraging habitat in North Dakota consists of barren sand and gravel bars and shorelines of the Missouri River, Lake Sakakawea, and shorelines of prairie alkali lakes. The piping plover occurs in North Dakota from mid-April to August, with peak breeding season from May to mid-July.

The Proposed Action includes the installation and ongoing maintenance of existing and proposed municipal and industrial water intakes within Lake Sakakawea. The shorelines within the Action Area are known to provide suitable nesting and foraging for adult, chicks, and fledgling piping plovers. Known historical nesting colonies exist within Fort Berthold Reservation and include Little Knife Bay, Van Hook Arm, Little Shell Bay, Parshall Bay, Deepwater Creek, Arikara Bay, Renner Bay among others (**Figure 8**).

Stressors and Response

Suitable habitat may become undesirable or degraded during installation of a water intake or any project within 0.5 mile of designated critical habitat. Nests or young may be crushed by vehicles or maintenance staff. Stressors may include flushing or avoidance of individual adults or young near a Project Area due to disturbances such as sound presence of maintenance staff. Individual piping plover adults and/or fledglings would likely relocate to nearby suitable habitats. Adults may display altered behavioral response if nestlings are nearby.

Designated critical habitat may become degraded from compaction or contamination from harmful spilled chemicals. New permanent water intake facilities require rip rap or sheet piling bank stabilizations resulting in a net loss of habitat. Temporary water intakes require maintenance for diesel fueling or repair and cause noise disturbance on the shores of Lake Sakakawea.

If possible, construction would avoid the piping plover nesting season April 15 -August 15. If avoidance is not possible, a biological monitor would be required to be present during construction. Viewshed barriers from potential projects may preclude monitoring. Temporary or permanent damages to designated critical habitat resulting from construction would be avoided by using BMPs such as timber or rubber matting and secondary containment for harmful chemicals. Any potential project requiring diesel powered equipment would require secondary containment and a spill response plan. Any required 404 or Section 10 permits would be obtained by FBRW or Reclamation.

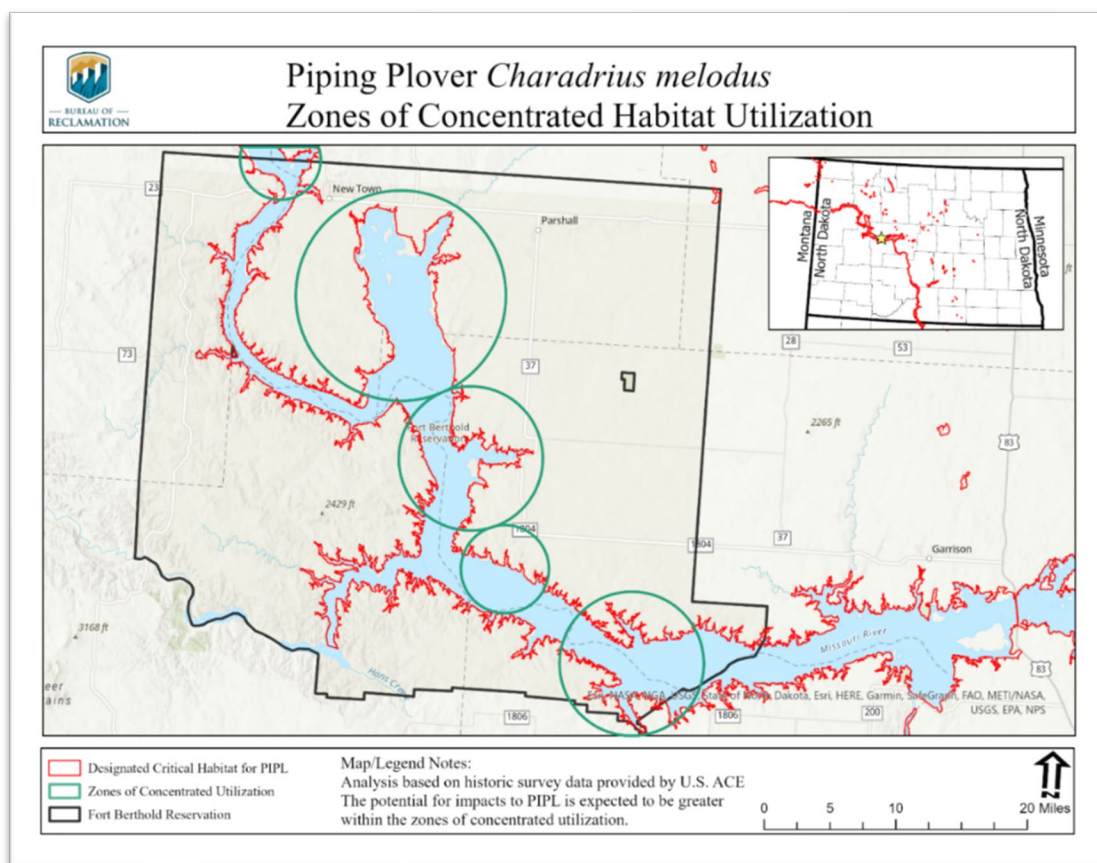


Figure 8. Action Area and Designated Critical Habitat for the Piping Plover

Rufa Red Knot

Rufa red knots are typically 9 to 11 inches in length. During the breeding seasons they are a mottled gray, black, and white that run into stripes on their head and face with a cinnamon-brown underside and face. The legs and bill are black. The bill is straight tapering to the tip. During the non-breeding season rufa red knots are white and gray.



Source: https://www.allaboutbirds.org/guide/red_knot/id

Population Range-wide

The rufa red knot was listed as threatened in 2014 (*Federal Register* 79:73706-73748). The red knot migrates between its breeding grounds in the Canadian Arctic and several wintering regions, including the southeast United States, the northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. During both the northbound and southbound migrations, red knots use key staging and stopover areas to rest and feed. Long-distance migrant shorebirds are highly dependent on the continued existence of quality habitat at a few key staging areas. These areas serve as steppingstones between wintering and breeding areas. Many of the key migration staging areas are along the coasts but there are records that show small numbers (fewer than 10) of red knots migrating together in the interior states as well. The primary threats to the rufa red knot include sea level rise, coastal development, arctic ecosystem change, and reduced food availability remain and, in some cases, increasing in intensity.

Aerial surveys completed in May 2021 show a marked decrease in numbers of individuals within Delaware Bay (New Jersey and Delaware), a known spring stopover location for the Southern wintering population. In fact, Delaware Bay is known to support 50 to 80 percent of all rufa red knots during May and June (USFWS 2021a). It is unknown whether this decrease is due to environmental factors or if the number represents an overall decrease in population. According to the 5-year Review, none of the Recovery Criteria included in the draft recovery plan have been met.

Action Areas

While little is known about interior migrating red knots, they are believed to be rare migrants through North Dakota, occasionally utilizing wetlands as stopover habitat. Migration through North Dakota occurs from mid-May to mid-September or early October. Geolocator results from a study of eight knots wintering in Texas found five of the birds used the Northern Great Plains (Saskatchewan, Canada, and North Dakota) as a stopover (USFWS 2014a). According to ebird.org, approximately 20 locations throughout North Dakota have been documented since 1982, with the nearest observation to Fort Berthold Reservation located approximately 40 miles north of New Town at the Palermo Wildlife Management Area in May 2022. Additionally, a red knot was spotted at the Belfield Water Treatment plant in August 2021, approximately 70 miles southwest of Halliday, ND. Although not a common visitor, it is apparent that the species utilizes habitat in North Dakota during the migration. However, migration of the red knot through North Dakota is rare and minimal.

Wetlands within Fort Berthold Reservation are typically associated with intermittent streams and drainage systems rather than prairie pothole or alkali wetland habitats. The most prominent water

feature within Fort Berthold Reservation is Lake Sakakawea which may on rare occasions provide suitable shoreline stopover habitat.

Stressors and Response

Stressors include flushing from suitable stopover wetlands from noise and activity from construction and operations. Noise from water pumping operations may deter use of habitat nearby on Lake Sakakawea. There is a potential for spills or releases of contaminants from operations of diesel engines on diesel pumps. Project development would include the avoidance of wetlands to the most practicable extent possible. Any potential project requiring diesel powered equipment would require secondary containment and a spill response plan.

Whooping Crane

Whooping cranes reach approximately 5 feet tall and have a wingspan that can reach 7½ feet. Whooping cranes are almost entirely white with black wingtips and have a red patch on the head that extends from the cheek along the bill. The eyes are yellow, and they have black legs.



Source: <https://www.fws.gov/midwest/whoopingcrane/>

Population Range-wide

The whooping crane was listed as endangered in 1967 (*Federal Register* 32:4001). Whooping crane recovery efforts have made great strides over the years, with new populations being established in Florida and Wisconsin. The birds that migrate through North Dakota are part of the Aransas-Wood Buffalo Population (AWBP) population. Approximately, 536 whooping cranes were estimated during the January 2023 survey, near Corpus Christi TX (USFWS 2022a). The previous winter survey from 2021-2022 estimated 543 whooping cranes, showing a relatively stable population over the last two years.

The whooping crane recovery plan includes scientific information about the species and provides objectives and actions needed to down-list the species (USFWS 2007). Recovery actions designed to achieve these objectives include protection and enhancement of the breeding, migration, and wintering habitat for the Aransas-Wood Buffalo population. The goals are to allow the wild flock to grow and reach ecological and genetic stability; reintroduction and establishment of geographically separate self-sustaining wild flocks to ensure resilience to catastrophic events; and maintenance of a captive breeding flock that is genetically managed to retain a minimum of 90 percent of the whooping cranes' genetic material for 100 years. All three efforts to maintain a self-sustaining breeding population outside of the AWBP population through reintroduction have failed. Efforts continue in Wisconsin, Florida, and Louisiana.

According to the latest 5-year review (USFWS 2012) the repeated lack of success to establish breeding populations elsewhere suggests efforts to increase and sustain the AWBP population to 1,000 individuals is the most likely strategy for the eventual down-listing and recovery of the whooping crane.

Action Area

The whooping crane frequently migrates with sandhill cranes by passing through North Dakota each spring and fall while migrating between its breeding territory in northern Canada and wintering grounds on the Gulf of Mexico. They prefer freshwater marshes, wet prairies, shallow portions of rivers and reservoirs, grain and stubble fields, shallow lakes, and wastewater lagoons for feeding, loafing, and roosting. Fall migration occurs in North Dakota from late September to mid-October, while spring migration occurs from late April to mid-June (**Figure 9**). Birds can appear in all parts of North Dakota, although most sightings are in the western two-thirds of the state. In 2018, the USGS delineated a migration corridor that outlines the percentage of confirmed crane sightings based on current and historical sighting reports (Pearse et al 2018). The Proposed Action is located within this migration corridor where 50 percent of sightings have occurred.

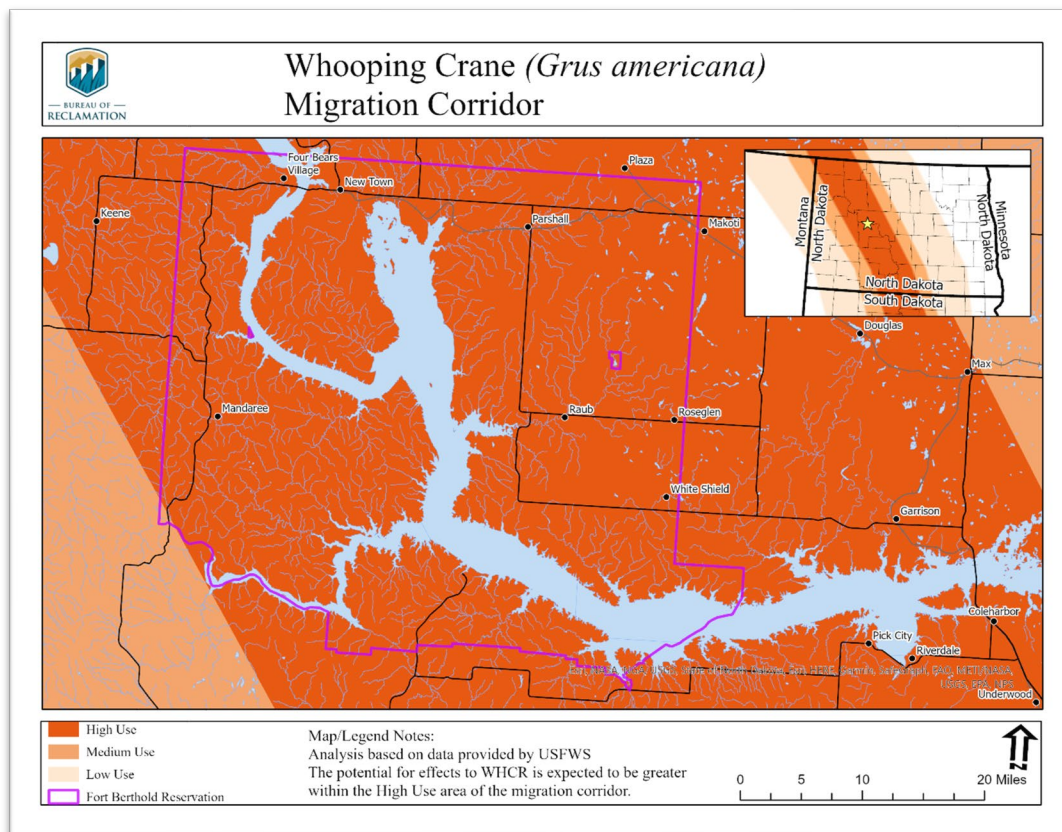


Figure 9. WHCR migration corridor near the Action Area

Fort Berthold Reservation contains a considerable amount of agricultural industry which in combination with wetlands and intermittent drainages can provide suitable stopover habitat. These wetland/agricultural matrix areas provide both small grain foraging and roosting areas which are known to be selected for stopover by migrating whooping cranes. According to ebird.org, the most recent whooping crane sightings occurring near Fort Berthold Reservation include sightings at Renner Bay, Van Hook arm, and near Roseglen (**Figure 10**).

Stressors and Response

Stressors include disturbance from human presence to migrating whooping cranes to less suitable habitats or avoidance of suitable stopover habitat during construction. Construction areas result in increased noise and higher activity levels. Whooping cranes are also known to avoid permanent structures on the landscape and viewshed.

Construction would avoid all wetlands to the extent possible. If avoidance of wetlands cannot be achieved, wetlands would be restored to pre-construction conditions. If a whooping crane is sighted within 0.5 mile of any potential project area, construction activities would immediately cease until the individual(s) have left the area. Any potential project requiring diesel powered equipment would require secondary containment and a spill response plan.

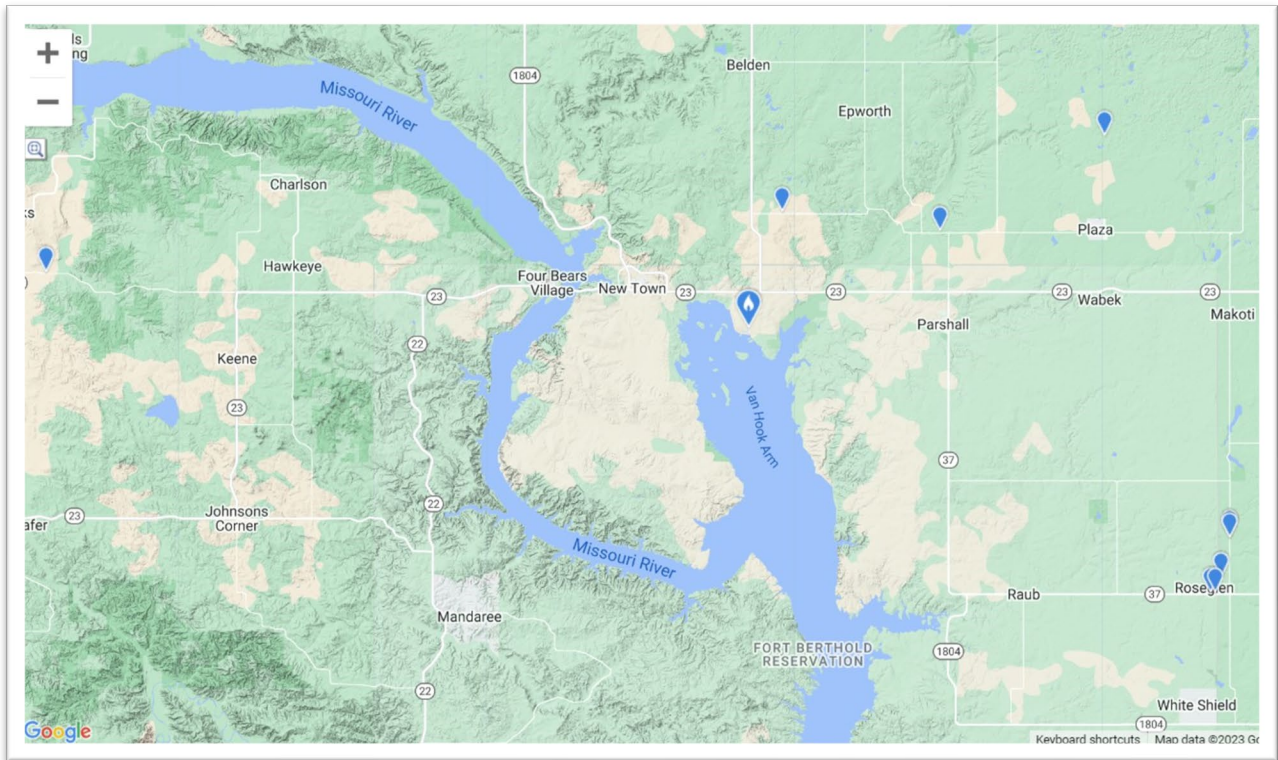


Figure 10. Nearest whooping crane sightings to Fort Berthold Reservation

(available from [Whooping Crane Sightings Map, All About Birds, Cornell Lab of Ornithology](#))

Pallid Sturgeon

Pallid sturgeon is one of the largest fish found in the Missouri and Mississippi River Systems, weighing up to 85 pounds. Pallid sturgeons are typically light brown with a white underside. The snout is flat and shovel-shaped with fleshy chin barbels.



Source: <https://www.fws.gov/southdakotafieldoffice/STURGEON.HTM>

Population Range-wide

The pallid sturgeon was listed as endangered in 1990 (Federal Register 55:36641-36647). The pallid sturgeon requires turbid water and flow rates of large, free-flowing rivers. Historically, the geographic range included the lower 200 miles of the Yellowstone River; the Missouri River (from Fort Benton, MT to St. Louis, MO); the Mississippi River from St. Louis south to Louisiana; larger

tributaries include the Platte, Kansas, St. Francis, Ohio, Arkansas, and Yazoo/Big Sunflower Rivers; and the Atchafalaya River. The total length of the pallid sturgeon's historical range was approximately 3,515 river miles (USFWS 2014b). Today, the pallid sturgeon has been limited to fragmented segments of free-flowing rivers within its historical range. The threats to the species remain including channelization, altered flow regimes, decreased water quality, water temperature changes from climate changes, and increased development within and nearby rivers. Hybridization with the shovelnose sturgeon has also been reported.

The latest 5-year review published in 2021 (USFWS 2021b) noted that despite the ongoing immense conservation efforts among partners, the pallid sturgeon persists, although in very numbers. The latest effort for the recovery of the species included the recent completion of the bypass channel and replacement weir at the Intake Diversion Dam on the lower Yellowstone River in Montana approximately 70 river miles upstream of the confluence with the Missouri. The bypass channel project opened approximately 165 river miles of potential spawning and larval drift habitat within the Yellowstone River (Corps 2022).

Action Area

Pallid sturgeon observations have been reported on the Missouri River in North Dakota between Fort Peck Dam and Lake Sakakawea (Jordan 2006). Most commonly in North Dakota the species is observed upstream of Lake Sakakawea and near the confluence of the Missouri River and Yellowstone River.

Lake Sakakawea within Fort Berthold Reservation is classified (NWI classification) as a lacustrine system, which are generally deep water-permanently flooded habitats situated in a topographic depression or a dammed river channel. These deep-water habitats typical of the bays of Lake Sakakawea do not typically provide suitable habitat for the pallid sturgeon. However there have been documented occurrences of individuals below river mile 1519 in recent years.

Stressors and Response

Potential stressors to the pallid sturgeon include impingement or entrainment primarily from potential water intake projects installed within the action area. Contamination of Lake Sakakawea from spilled diesel fuels or harmful chemicals can result in habitat degradation. Any potential project requiring diesel powered equipment would require secondary containment and a spill response plan. The environmental commitments to prevent the potential for harm to the pallid sturgeon or habitat are listed in **Table 15 and Appendix C**.

Northern Long-eared Bat

Northern long-eared bats are a medium-sized bat, with very long ears. Their length is 3.0 – 3.7 inches with a wingspan of 9 – 10 inches. The fur color is medium to dark brown on the back with a tawny to pale brown on their underside.



Source: <https://www.fws.gov/wyominges/Species/NLEBat.php>

Population Range-wide

The northern long-eared bat was listed as threatened in 2015 (*Federal Register* 80:17974-18033) with a 4(d) rule in 2016 (*Federal Register* 81:1900-1922). In 2023, the species was up listed to endangered across its range (*Federal Register* 81:73488-73504) which became effective on March 31, 2023 (USFWS 2023). The range of the northern long-eared bat includes much of the eastern and north-central United States and all of North Dakota (**Figure 11**). The northern long-eared bat spends winters hibernating in caves and mines. In summer, the northern long-eared bat roosts underneath bark of live and dead trees, rock crevices, caves, mines, barns, and sheds. Breeding of the species begins in late summer or early fall. After copulation, females undergo delayed fertilization where they store the sperm through hibernation and fertilize the egg with the stored sperm in early spring (USFWS 2022b).

The dramatic decline of the northern long-eared bat is mostly due to white-nose syndrome. White-nose syndrome is caused by the fungus *Pseudogymnoascus destructans* (Pd). Pd thrives in cold damp places where bats hibernate for the winter. Pd grows on bats while they are inactive and causes damage to the skin and soft tissues. The name white-nose syndrome comes from the fungus which appears like white fuzz on the nose or other hairless parts of the bats, including their wings (white nose syndrome.org). There are many unknowns regarding white-nose syndrome, however it is expected that the disease will continue to spread throughout the United States. Other sources of decline include impacts to hibernacula, degradation of summer habitat, and wind farm operation.

Action Area

The northern long-eared bat historically occupied the eastern half of the state of North Dakota, but more recent surveys have documented distributions across the entire state. Summer surveys in North Dakota have detected this species south and west of the Action Area (North American Bat Monitoring Program (NA Bat)). The species is known to roost in large deciduous trees along wetland areas. In North Dakota the species is known to roost in cottonwood and ash trees closely tied to the Missouri and Little Missouri River systems (Nelson, 2015). Although unknown to Reclamation at this time, it is possible that northern long-eared bats use “suitable” roosting trees located within Fort Berthold Reservation, especially considering the proximity to Lake Sakakawea and the Little Missouri River. However, Reclamation has yet to undertake surveys of NLEB roosting locations and is not aware of known hibernacula’s or known maternity roost trees within Fort Berthold Reservation. Reclamation has reviewed all available sources of data available from the USFWS and the North American Bat Monitoring Program for northern long-eared bat. Detections continue to be rare but occurrences have been documented using a variety of sampling techniques including acoustic monitoring and live capture (NA Bat).

Stressors and Response

Removal of suitable occupied roosting habitat may cause mortality or stress bats into choosing other less suitable areas. Disturbance may also result from noise from construction and related activities near suitable roosting areas or potential hibernacula. Reclamation is not aware if NLEB avoid previously occupied habitats if disturbed by noise, light, or increased activities.

Any suitable roosting tree removal required for a potential project would be completed during the hibernation period (November 1-March 31). Reclamation will continue to be in contact with the USFWS, the ND Game and Fish and other databases to remain apprised of new occurrences and regulations involving the NLEB during the lifespan of this document.

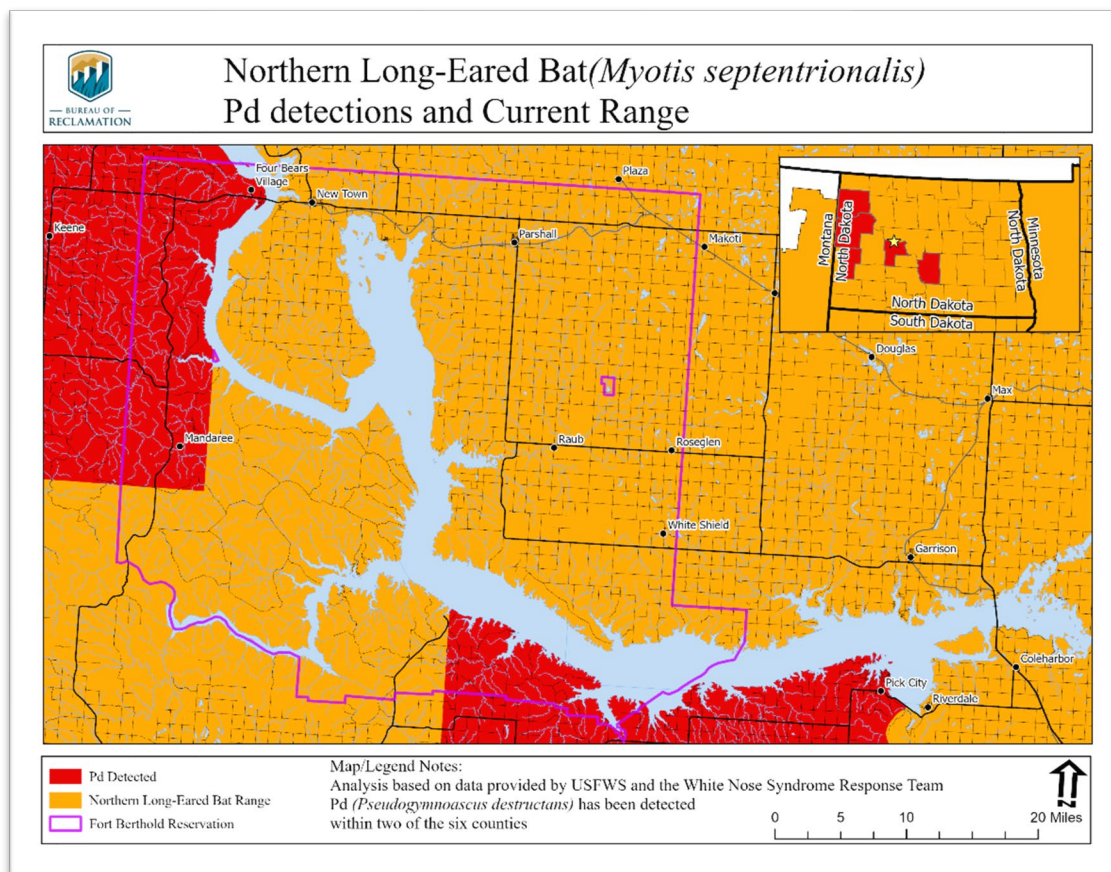


Figure 11. Northern long-eared bat Range within ND and Positive Pd detections

Dakota Skipper

Dakota skippers are small butterflies with a thick body and 1-inch wingspan. The male's wings are tawny-orange to brown on the upper side with a prominent mark on the forewing, while the female's wings are darker brown with tawny-orange spots and a few white spots on the forewing (USFWS 2018). Adults of the species are active for only three weeks in late June through mid-July, and eggs are laid on the underside of basal leaves of native bunch grasses hatching in late-July. The resulting larvae feed on native grass until they go dormant in late summer. The larvae then winter in shelters very close to the ground until spring when they come out of dormancy in their adult form (USFWS 2018).

Female(left) and Male (right) DASK



Source: <http://mnzoo.org/blog/animals/dakota-skipper/>

Population Range-wide

The Dakota skipper was listed as threatened with a 4(d) rule in 2014 (*Federal Register* 79:63672-63748). Critical habitat was designated in 2015 (*Federal Register* 80: 59248-59384), with 38 units identified in three states including North and South Dakota, and Minnesota. Historically, the Dakota skipper had been recorded from northeast Illinois to southern Saskatchewan, although they likely occurred throughout the prairie in north-central U.S. and south-central Canada. The Dakota skipper requires high quality native prairie for each of the four stages of its life cycle. This species is in decline due to the widespread conversion of native prairie to agricultural uses (USFWS 2019).

Two distinct habitat types have been identified, moist bluestem prairie and upland prairie on hillsides and ridges. The habitat types are detailed below:

- Type A habitat is characterized by low wet-mesic prairies often occurring near glacial lake deposits with low topographic relief. Representative species include bluestem grasses and forbs typically present and blooming during adult flight periods: wood lily, bellflower, and deathcamas (USFWS 2021c).
- Type B habitat is typically found on the western edge of the species range comprised of rolling glacial moraines containing high diversity and density of native grasses and forbs. Representative species include bluestem and needlegrass species with the following forbs: purple coneflower, purple prairie clover, white prairie clover, yellow sundrops, prairie groundsel, groundplum milkvetch, eastern pasqueflower, prairie smoke, western silver aster, dotted blazing star, blanket flower, fringed sagewort, and lead plant (USFWS 2021c). Additional forbs typically present are wood lily, bluebell bellflower, coneflowers, and a variety of asters as nectar sources (USFWS 2021c).

Action Area

The Dakota skipper is known to occupy sites in numerous counties in North Dakota, including Fort Berthold Reservation (**Figure 12**). Critical habitat is designated in McKenzie, McHenry, Richland, Rolette, and Ransom Counties in North Dakota. The closest designated critical habitat Units 11 and 12 are located approximately 40-miles northwest of Fort Berthold Reservation. Multiple surveys have been conducted on Fort Berthold Reservation lands, mostly due to the increase in oil and gas construction, and positive sightings have occurred during these surveys.

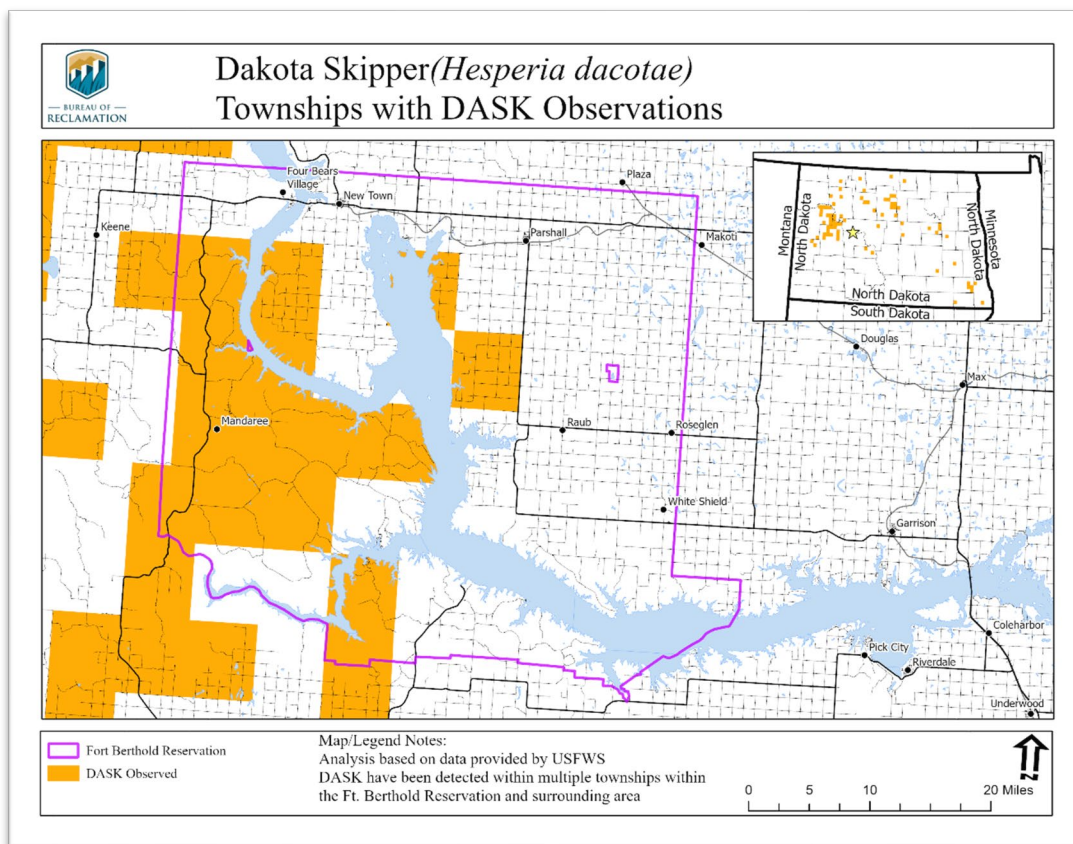


Figure 12. Dakota skipper Observations around Fort Berthold Reservation

Reclamation conducted a preliminary desktop review of the Action area by utilizing Google Earth imagery and the LANDFIRE vegetation database (Landfire 2023). Fort Berthold Reservation contains approximately 40 Existing Vegetation Types; the top 10 landcover types are listed below in descending order:

- Northwestern Great Plains Mixed Grass Prairie;
- Open Water
- Western Cool Temperate Wheat
- Western Great Plains Wooded Draw and Ravine
- Western Cool Temperate Row Crop- Close Grown Crop
- Northwestern Great Plains Riparian Herbaceous
- Western Cool Temperate Fallow/Idle Cropland
- Western Cool Temperate Pasture and Hayland
- Developed Roads
- Northwestern Great Plains Riparian Forest

The USFWS Dakota skipper occurrence map (**Figure 13**) revised in 2022 shows the northeastern areas within Dunn County and northwestern areas of Mercer County contain a relatively concentrated probability of occurrence. The BIA HSM model shows similar areas of concentrated suitability. These areas are within the Mandaree and the Twin Buttes Segments of the Fort Berthold Reservation rural water system. Areas of high probability are closely related to the LANDFIRE data and correspond to the areas identified as Northwestern Great Plains Mixed grass Prairie.

These areas have potential to contain native grasses, especially requisite species such as little bluestem and purple coneflower. Little bluestem favors well-drained soils with a pH of 7.0 or slightly higher and is a highly adaptable species which can live in sandy to clay-loam soils. Purple coneflower has a low tolerance of drought conditions and will grow in a wide range of soil textures with a preference of a pH of 6.5 to 7.2.

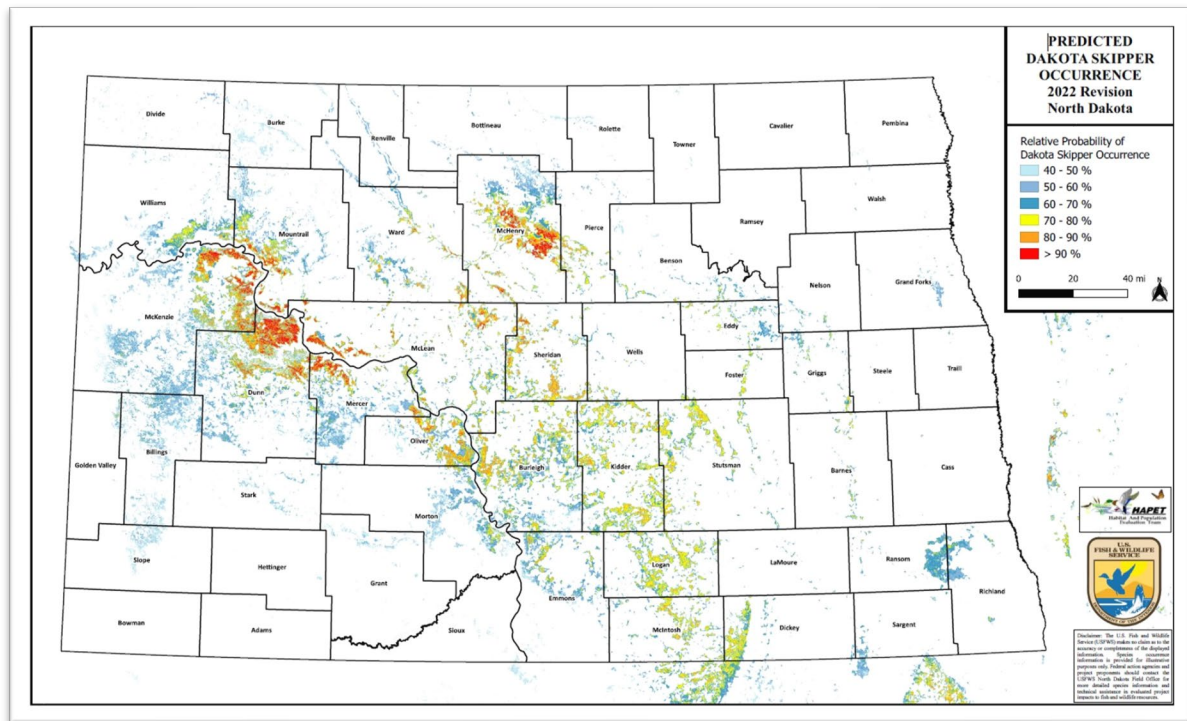


Figure 13. Dakota skipper Probability of Occurrence (USFWS 2022)

Stressors and Response

Potential stressors include crushing and flushing of adult or larvae Dakota skipper during construction. Habitat degradation and loss from construction, soil compaction, erosion, and dusting of habitats. Noxious weed and non-native vegetation encroachment around reclaimed project areas. Suitable habitat nearby a construction site may become less desirable and Dakota skippers may move away from the disturbance into less suitable habitats. Standard construction, industry measures would be taken to minimize fugitive dust emissions during construction activities. Vegetated areas temporarily disturbed by construction (except cropland) would be revegetated with species appropriate to ecological conditions of the surrounding area, and in a manner that prevents erosion and noxious weed invasion. preventing the spread of noxious weeds.

Monarch

The monarch is a species of butterfly in the order Lepidoptera, it is among the most recognizable and iconic pollinator species of North America. They are easily identified by their distinct patterned black and orange wings. Adults have a wingspan of 3 to 4 inches and weight on average half a gram. A typical adult will live approximately 2 to 5 weeks, with the exception of overwintering adults who can live 6 to 9 months after entering into diapause. The population of monarchs within the Dakotas are migratory, utilizing the available habitat during the warm summer months. Adult monarchs feed on the nectar of a variety of flowering plants but they only lay their eggs on milkweed species. Larval monarchs feed on milkweed plants and sequester toxic cardenolides as a defense against predators (USFWS 2020b).



Source: <https://www.fws.gov/media/monarch-butterfly-swamp-milkweed>

Population Range-wide

After review, the USFWS has determined that listing the monarch butterfly as endangered or threatened species is warranted but precluded by higher priority actions to amend the list of endangered and threatened wildlife and plants (*Federal Register* 85:81813-81822).

There are two main populations of migratory monarchs in North America. One breeds west of the Rocky Mountains and overwinters in California. The second, the population to which the monarchs found in North Dakota belong, breed east of the Rocky Mountains and overwinter in Mexico (USFWS 2020c). The primary drivers affecting the health of the two North American migratory populations are changes in breeding, migratory, and overwintering habitat (due to conversion of grasslands to agriculture, urban development, widespread use of herbicides, logging/thinning at overwintering sites in Mexico, unsuitable management of overwintering groves in California, and drought), continued exposure to insecticides, and effects of climate change (USFWS 2020b).

Action Area

Monarchs occur in North Dakota from early May to mid-September, with peak breeding season from June to August. The action area contains suitable breeding habitat for monarchs. As pollinators monarch feed on the nectar of a variety of flowering plants, however they only breed where milkweeds are found. There nine native milkweed species known to occur within Fort Berthold Reservation and milkweed can grow in a variety of areas including grasslands, cropland edges, and road-side ditches.

Stressors and Response

Potential stressors include crushing or flushing of adult or larval monarchs during construction. The permanent conversion of grasslands containing nectar providing flowering plants and the monarchs primary host plant (milkweed) may occur within potential project areas. Herbicide use may be used to control noxious weeds immediate after construction and during re-seeding efforts. Reclamation recommends the avoidance of native prairie and milkweed stands during potential project development. Native prairie seed mixes containing a variety of flowering forbs and milkweed should be considered for re-seeding efforts.

Effects Analysis

The term “effects of the action” refers to the direct and indirect effects of a Proposed Action on listed species and designated critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR §402.2). Reclamation reviewed the Action Area settings, life history, habitat information, and environmental baseline for each of the federally listed species to evaluate potential effects. The results of this analysis are reported below.

Reclamation has identified four potential conclusions as described in the ESA regulations regarding analyses for impacts on listed species or critical habitat:

- **No effect** - the appropriate conclusion when the action agency determines its Proposed Action will not affect listed species or critical habitat, or
- **May Affect** - appropriate conclusion when a Proposed Action may pose any effects on listed species or their critical habitat
- **Is not likely to adversely affect** – the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial.
 - Beneficial effects are contemporaneous positive effects without any adverse effects to the species.
 - Insignificant effects relate to the size of the impact and should never reach the scale where take occurs.
 - Discountable effects are those extremely unlikely to occur.
- **Likely to adversely affect** – the appropriate conclusion if any adverse effect to listed species may occur as a direct or indirect result of the Proposed Action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant or beneficial.

Determination of Effects by Species

Piping Plover

It is possible that piping plovers may utilize shorelines near potential projects and pass through those project areas regular basis. Potential water intake projects may be installed and operational during the piping plover nesting season (April 15- August 15).

If any potential project would be developed within 0.5 mile of Lake Sakakawea between April 15- August 15, the required environmental commitments described in **Table 15** would be implemented. Additional guidance on survey requirements are provided in **Appendix C**. Considering the environmental commitments provided, ***the Proposed Action may affect, but is not likely to adversely affect the piping plover.***

Piping plover Designated Critical Habitat

The Action Area occurs within piping plover designated critical habitat unit 11 (Lake Sakakawea) and contains barren shoreline suitable for piping plover nesting and foraging. Potential projects may temporarily or permanently occupy designated critical habitat. These potential projects may require permanent riprap, future repair, additional protection, or other usage of the shoreline. Any temporary or permanent installations or access of designated critical habitat would follow the environmental commitments described in **Table 15**. ***The Proposed Action may affect, but is not likely to adversely affect piping plover designated critical habitat.***

Rufa Red Knot

Although wetlands providing potential habitat for the rufa red knot occur in the Action Area, sightings of the species are rare in North Dakota and no recorded observations have occurred within the Action Area. Temporary or permanent effects to suitable stopover habitat would be avoided. Contact information to report sightings to the FWS are listed in **Appendix C**. Therefore, ***the Proposed Action will have no effect on the rufa red knot.***

Whooping Crane

The Proposed Action occurs within the migration corridor where 50 percent of whooping crane sightings have occurred. There are documented sightings northeast of Lake Sakakawea. There are areas within Fort Berthold Reservation that are dominated by small-grain row crops which are

known to provide migrating whooping cranes foraging habitat. However suitable wetlands which provide the roosting cover are not as available. There is possibility that whooping cranes may pass through a potential project area.

If any whooping cranes would be sighted within 1-mile of any potential project area, the required environmental commitments described in **Table 15** would be implemented. Contact information to report sightings to the FWS are listed in **Appendix C**. Considering the environmental commitments provided, *the Proposed Action may affect, but is not likely to adversely affect the whooping crane.*

Pallid Sturgeon

The Action Area is not located within a designated pallid sturgeon recovery zone and Lake Sakakawea generally lacks suitable riverine habitat. However, recently pallid sturgeons have been reported below river mile 1519 within Lake Sakakawea. In addition, there is potential for new temporary and permanent water intakes within the Action Area.

Any potential new water intake would be designed to the specifications listed in **Appendix C**. Considering the environmental commitments provided, *the Proposed Action may affect, but is not likely to adversely affect the pallid sturgeon.*

Northern Long-Eared Bat

Northern long-eared bats may use “suitable” roosting trees within the Action Area. However, Reclamation is not aware of any survey results, nor have maternity roost trees or hibernacula been identified within the Action Area. However, Fort Berthold Reservation does contain sandstone cliffs, caves, rocky outcroppings, and karst features that could provide habitat for hibernating bats, especially along the banks of Lake Sakakawea.

Any suitable roost tree removal required for a potential project would be conducted during the hibernation season as described in **Table 15**. See **Appendix C** for additional information on the NLEB. FWS guidelines will be updated April 4, 2024. Reclamation will provide additional guidance at that time. Considering the environmental commitments provided, *the Proposed Action will have no effect on the Northern long-eared bat.*

Dakota Skipper

Although there is a high concentration of Dakota skipper occurrences within Fort Berthold Reservation, it is unknown if this is due to the increased number of surveys on Fort Berthold Reservation or an actual indicator of habitat quality or population density. In any case, Dakota skipper do exist within the Action Area, and suitability of any potential project area would be determined at that time. Rural water projects are generally co-located in previously disturbed areas along established roads to access existing homes and communities. However, there is a known presence of the species within Fort Berthold Reservation and there is potential for suitable habitat to be present in any potential project area.

A Dakota skipper habitat assessment would be completed for any potential project in accordance with the parameters outlined in the Biological Assessment Addendum 2 (BIA 2021). Additional information including FWS website links and adult survey guidance information may be found in **Appendix C**. Considering the environmental commitments provided, *the Proposed Action may affect, but is not likely to adversely affect the Dakota skipper.*

Monarch

As a candidate the monarch will be re-evaluated every year and status and recovery actions determined at that time. Project activities will avoid large stands of milkweed and other known monarch habitat. Reclamation recommends incorporating conservation or restoration measures into any potential project design to ensure that any potential effects on monarch butterflies will be temporary. Although a determination is not required for candidate species, Reclamation encourages consideration of the species habitat during project development.

In the event any threatened or endangered species are encountered during activities, the contractor will contact Reclamation. Reclamation will consult with the USFWS to determine the appropriate steps to avoid any effects to these species, including cessation of construction.

Reclamation has requested the USFWS concurrence with Reclamation's determination that implementation of FBRWS Phase III may affect, but is not likely to adversely affect the piping plover and piping plover designated critical habitat, whooping crane, pallid sturgeon, and Dakota skipper. Reclamation has also determined that Phase III will have no effect on rufa red knot or the Northern long-eared bat.

Results of Reclamation's informal ESA Section 7 consultation with USFWS will be included in the Final PEA.

Environmental Effects of the No Action Alternative

There would be no additional effects to threatened, endangered, or proposed species and to designated and proposed critical habitats under the No Action Alternative.

Land and Vegetation Resources

Land and vegetation resources are broadly defined as the combination of geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology that comprise the native habitats in the Action area. Classifications systems used to delineate land resources vary based on scale. Ecoregions are a broad classification system used by the EPA to denote land areas sharing similar environmental resources (Bryce et. al 1996). Ecoregions are divided into several levels, with Level 1 being the broadest classification and Level IV being the most detailed.

The NRCS uses Ecological Site Descriptions (ESDs) to classify and delineate land units based on soils and how each area would respond to management activities or disturbance. This classification system is more applicable to projects on the local level since it uses detailed soil survey maps. However, soil surveys are limited depending on the scale at which the survey was conducted. Therefore, the analysis below uses a combination of the EPA ecoregions, NRCS ESDs (combined with soil surveys), and biological field surveys to determine the baseline conditions within Fort Berthold Reservation.

Affected Environment

Fort Berthold Reservation is within the broad Northwestern Great Plains and Northwestern Glaciated Plains (Level III) ecoregion and near the confluence of five Level IV ecoregions: the Missouri Coteau, the Missouri Coteau Slope, the River Breaks, the Little Missouri Badlands, and the Missouri Plateau (**Figure 14**). Near Lake Sakakawea in the River Breaks, Fort Berthold Reservation is comprised of broken terraces and uplands that have formed from soft, easily erodible soils and parent materials (Bryce et al 2008). The topography is dissected by woody draws with upland

hillsides dominated by native prairie. Farther away from Lake Sakakawea, Fort Berthold Reservation gradually became flatter, with fewer woody draws and drainages, typical of the Missouri Plateau.

Vegetation communities vary based on these two distinct land resource areas. Rolling topography typical of the River Breaks is dominated by western wheatgrass (*Pascopyrum smithii*), little bluestem (*Schizachyrium scoparium*) and needlegrass (*Hesperostipa* sp.). Draws and north facing slopes are generally dominated by green ash (*Fraxinus pennsylvanica*), Rocky Mountain Juniper (*Juniperus scopulorum*), and other woody species. Flatter topography of the Missouri Plateau is dominated by western wheatgrass prairie. Invasion from non-native species occurred primarily near existing disturbances (i.e., roads). Smooth brome (*Bromus inermis*), sweetclover (*Melilotus* sp.) and crested wheatgrass (*Agropyron cristatum*), all non-native plants, were typically present adjacent to existing roads but are also scattered within native areas.

The River Breaks and Missouri Plateau ecoregions appear to each have a distinctive ESD, which differ in their land use capabilities. Soils in the steep, broken topography near Lake Sakakawea are classified as “Not Suited,” indicating that the steep topography makes the area unsuitable for forage production due to the high potential for erosion. In flatter topography, soils are classified as Clay or Loam. Limy upland soils are typically high in concentrations of calcium carbonate, which reduces the availability of some plant nutrients and can limit their ability to revegetate after disturbances. Loams are typically not limited by any particular chemical constituent. However, both limy upland and loam soils, if present on steep slopes, are susceptible to erosion if not properly managed.

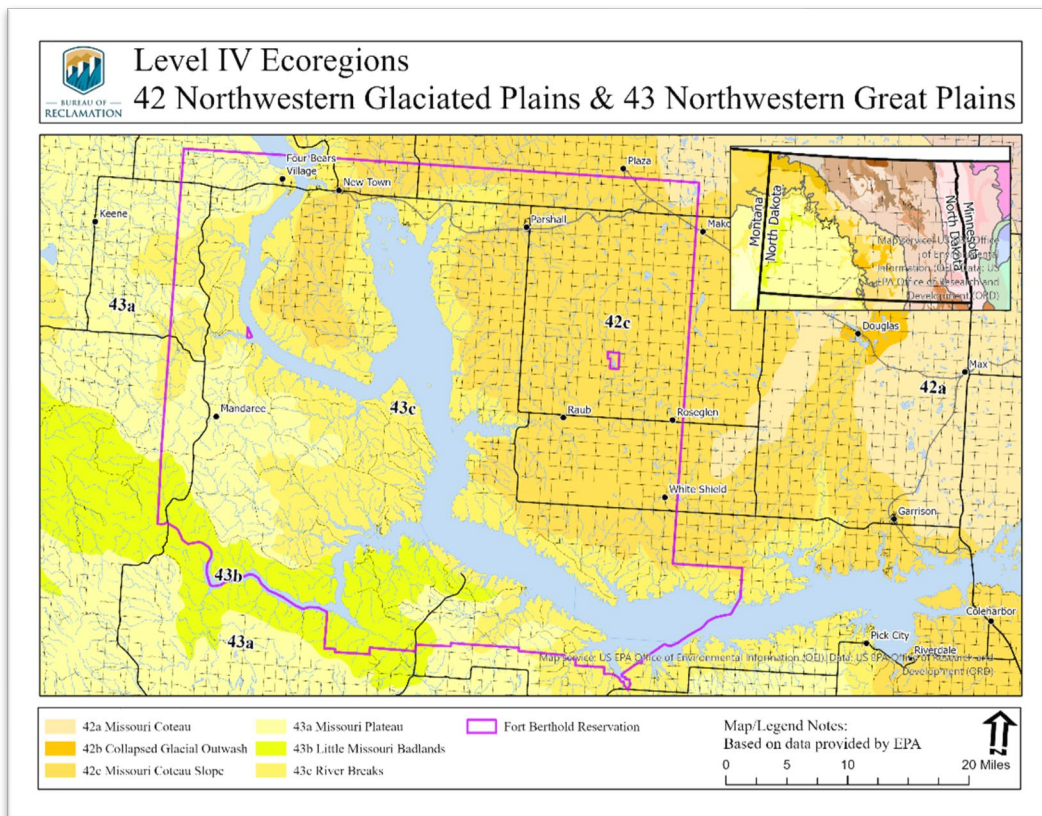


Figure 14. Ecoregion boundaries within Fort Berthold Reservation

Environmental Effects of the Proposed Action Alternative

Construction would result in disturbance to vegetation and soil resources within Fort Berthold Reservation. Adverse impacts to soil resources could in turn negatively affect revegetation efforts and long-term land uses in disturbed areas. Disturbed soils are also more likely to migrate into drainages and waterways, affecting water quality and hydrology. Since many of the soils that are susceptible to erosion exist within Fort Berthold Reservation, mitigating and reducing soil impacts are critical to reducing impacts to other land resources. Impacts are therefore discussed primarily from a soils perspective. Potential impacts to soil resources as a result of construction and O&M activities would include increased susceptibility to erosion, mixing of soil horizons, compaction, and contamination from spills, which are each further discussed below. However, most impacts would be expected to be short lived and temporary when implementing the environmental commitments described in **Table 15**.

Erosion. Soils exposed during and after construction and reclamation would be vulnerable to wind and water erosion until vegetation is established. This is especially true for construction in the Missouri River Breaks. Erosion control structures, such as fiber rolls, straw wattles, fiber mats, silt fences, or a combination of methods would be installed as necessary according to site-specific needs. Site-specific storm water pollution and prevention plan (SWPPP) plans would be prepared and implemented for all construction activities as required, which would outline measures and practices to control storm water runoff, sediment discharge, and erosion. With the use of these measures, erosion would be minimized. SWPPP plans for projects within Corps Garrison Project lands would be drafted to specifications listed in the Corps Non-Recreational Outgrant Policy (Corps 2009).

Horizon Mixing. Excavation of pipeline trenches would permanently disturb soil horizons in localized areas. New construction would be designed and sited, as much as practicable, to areas that have previously been disturbed to minimize permanent disturbance to native, previously undisturbed soils. New raw water pipelines would be routed to follow existing roads except where deviations are needed due to rugged topography. Excavation and grading extents would be limited as practicable to minimize soil disturbance. Topsoil would be segregated from subsoils and replaced on the surface after construction is complete, and then it would be replaced. Native areas would be replanted with native grasses in a timely manner on a site-specific basis. This approach would allow the contractors to comply with reseeding measures based on ownership as well as Tribal and BIA guidance.

Compaction. Compaction of soils may occur from the use of heavy equipment and any new O&M access. During reclamation of temporarily disturbed areas, de-compaction techniques (i.e. mechanical ripping) would be used as needed to prepare soils for seeding. Compaction of soils would be permanent underneath foundations of building and under any new pipelines.

Contamination. Equipment refueling could result in spills and localized chemical contamination of soils. Site-specific SPCC plans would be prepared and implemented for all construction activities as required, which would outline spill prevention measures and clean-up and reporting procedures. Refueling would occur in designated areas away from waterways. With the use of these measures, effects to soils would be avoided or minimized. SPCC plans for projects within Corps Garrison Project lands would be drafted to specifications listed in the Corps Non-Recreational Outgrant Policy (Corps 2009).

Impacts to native vegetation. These will be reduced to the extent possible by routing projects within previously disturbed corridors. If native prairie sod is broken during construction, existing topsoil would be salvaged to preserve the native seedbank; these areas would be replanted with native grasses to ensure successful revegetation. Heavily vegetated draws and woodland vegetation would be avoided to the extent possible. For unavoidable impacts to woody habitats, credit for equal value or environmental equivalent (2 to 1 planting ratio) (see Environmental Commitments **Table**

15) or the Project proponent may develop separate acceptable mitigation. With the implementation of these mitigation measures, effects to native vegetation and woody habitats would be avoided or minimized. Impacts to Corps lands would be mitigated according to Corps policy including replacement ratios and seed mixes in accordance with the Corps Non-Recreational Outgrant Policy.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, FBRWS Phase III would not be constructed and additional impacts to land resources would not occur.

Cultural Resources

Affected Environment

Reclamation is the lead federal agency for this undertaking and is responsible for compliance with the National Historic Preservation Act (36 CFR Part 800.16[y]). Section 106 of the NHPA requires Reclamation to consider effects to historic properties when planning and implementing actions such as those identified in this EA. Two types of cultural resources are analyzed in this EA: historic properties and Native American traditional cultural properties.

Historic Properties

The Area of Potential Effect (APE) for the proposed Phase III projects includes the entire Fort Berthold Reservation-wide FBRWS. The Fort Berthold Reservations is located within the Little Missouri River Study Unit (LMSU) and the Garrison Study Unit (GSU) which are two of 13 Study Units (drainage basins) used for precontact and protohistoric archeological site studies and management in North Dakota (**Figure 15**). The LMSU comprises of portions of Billings, Bowman, Dunn, Golden Valley, McKenzie, and Slope counties, and covers an area of 4,767 square miles (mi²) (Gregg and Bleier 2021). The GSU is in the northwestern part of North Dakota with Montana bordering to the west and Saskatchewan bordering to the north. It covers an area of 8,063 mi², comprising all or parts of eight counties: Burke, Divide, Dunn, McKenzie, McLean, Mercer, Mountrail, Ward, and Williams (Gregg et al. 2021).

As of December 2020, there were 2,659 archaeological sites, and 2,601 archaeological site leads and isolated finds documented in the North Dakota Cultural Resource Survey (NDCRS) for the LMSU. With the SU area of 4,767 mi², the density of recorded sites at that time was one site per 1.79 mi². It ranks with the Knife River SU and Garrison SU where vast areas have been inventoried in prospective energy development areas, and site densities are high because of the location of the KRF primary source area, heavy use by Plains Villagers, and relatively extensive areas surveyed. As of 31 December 2020, the total area surveyed in the LMSU was 523,982.97 acres. Therefore, the density of archaeological sites per acres surveyed is approximately one site per 197.06 acres (Gregg and Bleier 2021). Cultural material scatters, stone circles, and cairns (respectively) represent most of the site types in the LMSU. Other site types in the LMSU include eagle trapping pits, graves, quarry sites, rock shelters, rock art sites, earthlodge village sites, conical timber lodges, jump sites, hearths, trails, isolated lithic scatters, historic dumps, and other rock features.

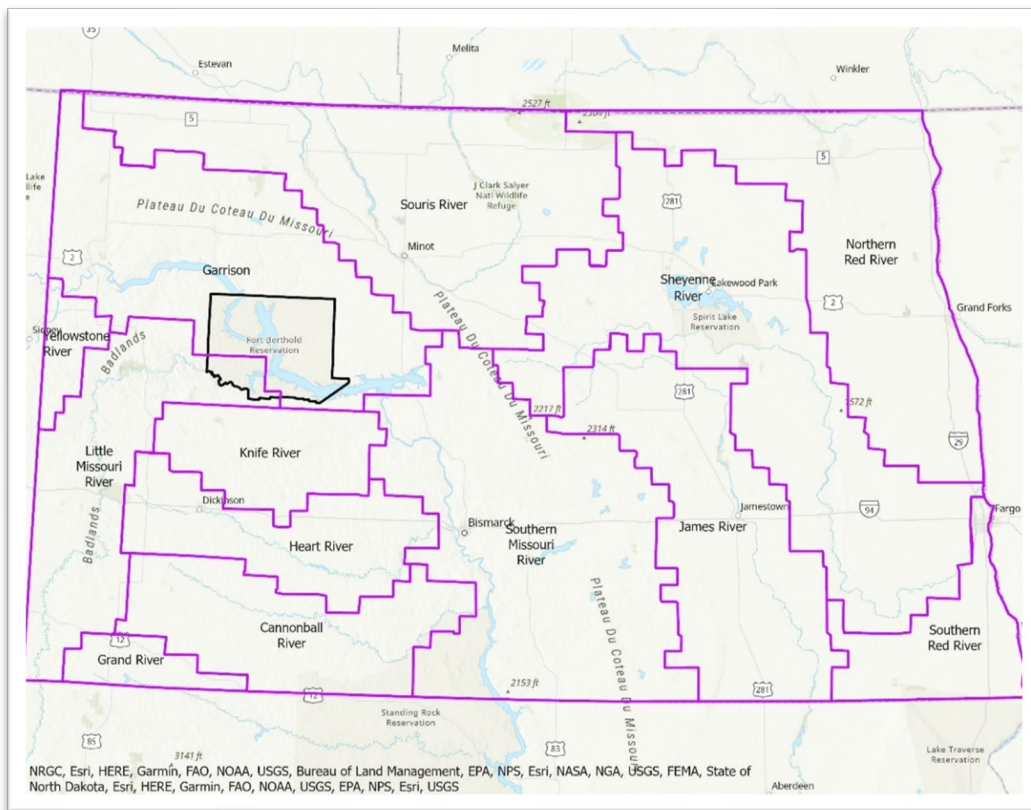


Figure 15. North Dakota Archaeological Study Units from the North Dakota Comprehensive Plan for Historic Preservation

Archaeological Component, available for public use electronically, in searchable .pdf format:

https://www.history.nd.gov/hp/stateplan_arch.html

As of December 2020, there were 5,106 archaeological sites and 2,848 archaeological site leads and isolated finds documented in the NDCRS for the GSU. With its area of 8,063 mi², there is one site recorded for every 1.6 mi². When including site leads/isolated finds there are 7,954 recorded resources or one recorded for every 1.0 mi². The GSU ranks second, after the Knife River SU, out of all the SU in site density (Gregg et al. 2021). Stone circles, cairns, and cultural material scatters (respectively) represent most to the site types in the GSU. Other site types in the GSU include storage pits, eagle trapping pits, graves, quarry sites, rock shelters, jump sites, mounds, rock art sites, earthlodge village sites, hearths, trails, isolated lithic scatters, historic dumps, and other rock features.

Stone circle sites, also called tipi ring sites, are distinguished by one or more circular rings of stone. Cairn are a pile or clustering of stones of varying size and shape. Rock cairns have been used for various purposes including, but not limited to, capping human burials, and ceremony, cache, trail, and boundary markers. Cultural material scatters can include (but are not limited to) precontact occupation sites, lithic scatters, historic dump sites, and sites consisting of the skeletal remains of prey animals. Occupation sites are scatters of artifacts, bone, pottery shards, and fire-cracked rock. Lithic scatters are distinct accumulations of stone (lithic) tools and/or debris from tool making. The sites consisting of faunal remains lack artifacts, but they appear to have been made as the result of human activity. Historic dump sites most often contain refuse from residential and/or industrial activities and can consists of everything from household trash to car parts and building debris.

A Class I cultural resource overview, describing, in general, the number and types of known resources in the APE, has been prepared for this EA. The literature search to identify known

historic properties was conducted using the National Register of Historic Places (NRHP) database, General Land Office (GLO) plat maps, Class I GIS data maintained by Reclamation, as well as Class I GIS data from the State Historical Society of North Dakota (SHSND), provided through the existing Memorandum of Agreement (MOA) for the FBRWS between the agencies (NDSHPO REF.:17-1266, June 12, 2023).

The NRHP and SHSND databases show that there are two sites in the APE that are currently listed on the National Register of Historic Places.

A total of 1,576 cultural resource inventories have been conducted within or have crossed into the exterior boundaries of the Fort Berthold Reservation as of June 2023, for a total survey area of approximately 346,492 acres. This represents approximately 35% of the Fort Berthold Reservation lands. An increase in oil and gas development beginning in 2008 has led to a proliferation of cultural resource survey of the APE. Of the 1,576 inventories conducted in the APE, 1,208 have been completed since 2008. The majority of which are located on the western half of the Fort Berthold Reservation and along shores of Lake Sakakawea. It should be noted however, that not all the inventories completed since 2008 have been for oil and gas development. Multiple inventories have been completed for road improvements, electrical lines, water lines and associated infrastructure, and tribal housing and commercial development.

A total of 2,422 sites and site leads have been recorded within the APE. A cultural resource site in North Dakota is defined as a location of past human activity that took place over 50 years ago and which left physical traces of activity in the form of 1) an intact cultural feature, 2) six or more artifacts found within about 60 meters of one another, and/or 3) an intact subsurface cultural deposit regardless of the number of artifacts. Site leads are identified by three separate definitions per North Dakota State Historic Preservation Office (SHPO) guidelines. The first consists of a location reported by a landowner or other non-professional as containing cultural resources. These locations are identified as site leads until such time as a qualified archaeologist or architectural historian can determine whether cultural resources exist in the area and, if so, whether the location is a site or an isolated find. The second definition for a site lead is a location with five or fewer surface visible artifacts that may, in the professional judgment of the archaeologist(s), be only a limited surface expression of a former occupation area where most of the artifacts are not visible (i.e., still buried). Third, architectural site leads are intended for sites that are outside the project area and not fully recorded or when access is denied so a site record form cannot be fully completed.

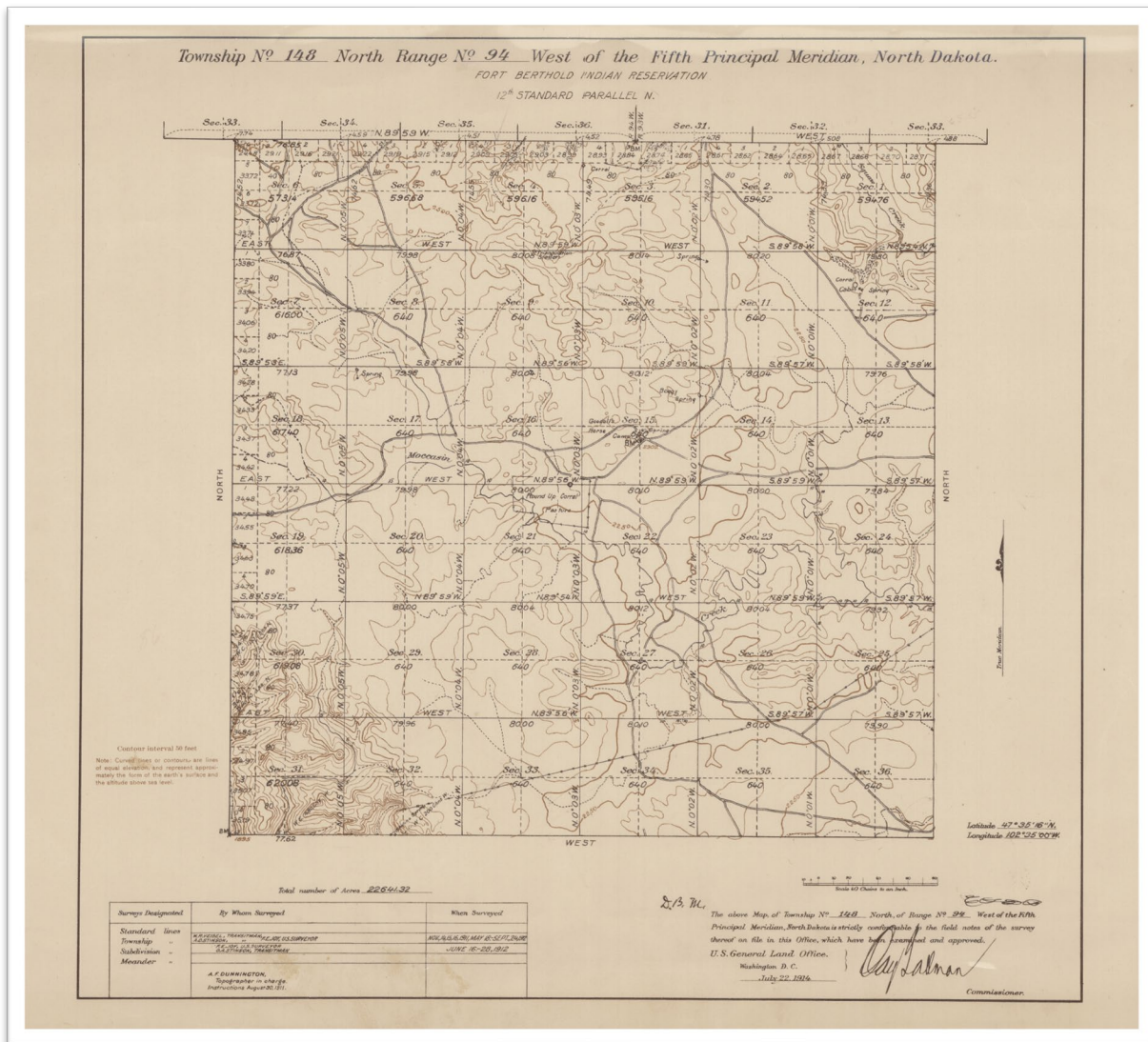
A total of 959 isolated finds have been recorded within the APE. Isolated finds, per the North Dakota SHPO guidelines, are defined as a location of five or fewer artifacts and identified by an archaeologist(s) as representing an area of very limited past activity.

Thirty-nine (39) architectural sites have been recorded on the Fort Berthold Reservation. Architectural site forms are used to record standing architectural features. The two NRHP listed sites within the APE are architectural sites.

Documented sites range from PaleoIndian (ca. 11,500–7,900 years before present [B.P.]) to protohistoric Native American sites and historic Euro-American and Native American sites. Previously documented precontact sites in the study area consists of stone circles, cairn, other rock alignment, lithic scatters, and isolated lithic debitage and tools. The lithic sites contain primarily Knife River Flint which is the most common lithic material found in central North Dakota. Previously documented historic sites are primarily farmsteads, cultural material scatters, dumps, schoolhouses, churches, and isolated historic objects such as wagons and farm equipment. The historic cultural material scatters commonly contain tin cans, glass, ceramics, wood, wire, nails, and

other metal artifacts. In addition to the documented sites, GLO plats indicate the presence of wagon roads, trails, horse camps, corrals, and fence lines (North Dakota State Water Commission 2023) (Figure 16).

The literature search indicates that there is an overall high site density across the Class I study area. The site density ($n=3,420$ total sites) for the APE is 2.2 sites per square mile. This is higher than the average site density for both the LMSU and the GSU. The majority of the sites within the APE are located on the western half of the Fort Berthold Reservation and along shores of Lake Sakakawea and correspond with the increased number of cultural resource inventories in those areas.



sent scoping information and a map of the Phase III project area. No tribe identified any sacred sites based on the initial information provided. Lack of identification early in the planning process does not guarantee that such sites do not exist, as tribes can be reluctant to share this information. Reclamation will continue to conduct tribal consultation as each project is brought forward for completion. Consultation is an ongoing process.

Forty-six cultural heritage forms have been created for locations within the APE. This form was created in 2013 by the North Dakota SHPO, in collaboration with regional Tribal Historic Preservation Offices (THPOs), as a response to the call for a form to record non-archeological sites. The Cultural Heritage Form is used to document and initially record traditional cultural properties, sacred sites, and/or sites of cultural and religious significance to anyone. The form is not a formal determination of significance by Federal, Tribal, and/or State officials.

Based on the number of cultural heritage locations within the APE, and in conformance with Executive Order 13007, the Three Affiliated Tribe's THPO was notified of the proposed project(s). The THPO was asked if they had interest in serving as members of the Cooperating Agency Team and if there is any sharable knowledge regarding any known traditional cultural properties and/or sacred sites they would like Reclamation to consider in the planning process.

Environmental Effects of the Proposed Action

Historic Properties

The issue identified in terms of the Proposed Action on historic properties are *Adverse Effects* on historic properties. Project impacts on this issue are described in terms of the likelihood of historic properties being present. A Class I overview was conducted to determine the likelihood of historic properties in the study area. The Class I overview found that the APE contains a higher than average number of cultural resources, an average 2.2 sites per mi². It should be noted that not all cultural resources identified in the Class I overview meet the requirements to be considered a historic property. A historic property is a resource that has been included in or determined to be *Eligible* for listing on the NRHP. However, the higher-than-average site density of the APE indicates that a historic property is likely to be located in or near proposed project areas.

The potential for direct impacts on cultural resources from development, including ancillary facilities, is directly related to the amount of land disturbance and the location of the project. Also considered are the indirect effects, such as impacts on the cultural landscape from erosion of disturbed land surfaces and increased human accessibility to possible site locations. Increases in human access can result in looting, vandalism, and trampling of cultural resources, and they could result from the establishment of corridors or facilities in otherwise intact and inaccessible areas. Visual degradation of the setting associated with significant cultural resources, including rock art sites, could result from development. This could affect significant cultural resources for which visual integrity is a component of their significance, such as sacred sites and landscapes and historic trails. Noise degradation of settings associated with significant cultural resources and sacred landscapes also could result from the presence of development; this could affect the pristine nature and peacefulness of a culturally significant location.

Reclamation recommends an updated Class I file search and Class III cultural resource inventory be completed (if no previous inventory has been conducted) for each project prior to the commencement of ground-disturbing activities. Under the NHPA, criteria are used to determine a cultural resource site's NRHP eligibility (36 CFR 60.4). In addition, criteria in 36 CFR Part 800 are applied to determine effects to historic properties. Any new cultural resources and historic

properties identified during the survey(s) will be evaluated for listing on the NRHP, as necessary. Newly recorded resources whose significance cannot be established prior to ground disturbance will be left unevaluated for the NRHP. Previously identified cultural resources and historic properties will be assessed based on their previous NRHP evaluations.

- Reclamation will provide recommendations for cultural resources determined to be *Not Eligible* for listing on the NRHP. Cultural resources within the APE are managed to the discretion of the Three Affiliated Tribes THPO, along with other land management agencies such as the Bureau of Indian Affairs and U.S. Army Corps of Engineers, when applicable.
- The preferred treatment of the unevaluated cultural resource sites would be avoidance. However, if avoidance is not possible, the unevaluated sites within the APE would be evaluated for eligibility to the NRHP. Reclamation would then consult with the Three Affiliated Tribes THPO on the determination of NRHP eligibility and effects in accordance with the NHPA.
- As stated above, cultural resource sites that are included in or *Eligible* for listing on the NRHP are given special status as historic properties. The preferred treatment of historic properties would be physical avoidance through the planning and design of activities and facilities and/or the avoidance of *Adverse Effects*. Reclamation would consult with the Three Affiliated Tribes THPO on the determination of effect in accordance with the NHPA if avoidance is not possible. The resolution of Adverse Effects would be done in consultation with the Three Affiliated Tribes THPO and the Advisory Council on Historic Preservation (ACHP).

Native American Traditional Cultural Properties

Issues identified in terms of traditional cultural properties and Native American sacred sites include changes in access or physical impacts on properties and sacred sites. Project impacts on these issues are described in terms of the presence of traditional cultural properties, sacred sites, or access to sites. The Three Affiliated Tribes THPO was consulted to determine if there was sharable knowledge of sacred sites. Moreover, projects will be assessed as to whether it would block currently open roads or make previously inaccessible areas accessible (EO 13007). Additional analysis of potential impact to traditional cultural properties will be conducted in consultation with the Three Affiliated Tribes THPO as part of the updated Class I and Class III cultural resource inventory.

Cemeteries and Unmarked Burials

Issues identified in terms of cemeteries and unmarked burials include changes in access or physical impacts on properties. Project impacts on these issues are described in terms of the presence of cemeteries and/or unmarked burials. The Three Affiliated Tribes THPO was consulted concerning shareable information on the locations of unmarked burials or cemeteries. All such burials or cemeteries will be avoided to the extent possible. If a burial or cemetery cannot be avoided or is encountered during construction, Reclamation will comply with the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001 et. seq. [Nov. 16, 1990]) if graves are discovered on Federal or trust lands or within Fort Berthold Reservation boundaries.

NAGPRA provides a process for Federal agencies to address new discoveries of Native American human remains, funerary objects, sacred objects and objects of cultural property intentionally excavated or inadvertently discovered on Federal or Tribal lands. Those processes are detailed in [43 CFR 10.4](#). "New" discoveries are those events occurring after November 16, 1990, when NAGPRA

was enacted. Additional analysis of potential impact to cemeteries and unmarked burials will be conducted in consultation with the Three Affiliated Tribes THPO as part of the updated Class I and Class III cultural resource inventory.

Any reroutes, redesigns, and/or additions to the Proposed Action Alternative not identified in this document will be subject to a cultural resource inventory as required by Section 106 of the NHPA, and consultation with the Three Affiliated Tribes THPO will be completed prior to any ground disturbing activities associated with the reroutes/additions.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, FBRWS Phase III would not be built. If the project is not built, there would be no effect to historic properties or traditional cultural properties.

Paleontological Resources

Affected Environment

The oldest exposed rocks containing fossils in North Dakota that paleontologists can explore are only about eighty-five million years old, and yet the fossil record of life in the state extends back to the Cambrian Period, over five hundred million years ago. This early record of life is revealed by fossils found in oil well cores (cylinders of rock) and cuttings (rock fragments) brought to the Earth's surface, often from several thousand feet, during exploration for petroleum (Hoganson 2006). The oldest fossils found in North Dakota are from the late Cambrian and early Ordovician (approximately five hundred million years old), recovered from depths of about fourteen thousand feet (4,200 meters) in the Deadwood Formation in Williams County. They are the microscopic tooth-like remains of the enigmatic, wormlike marine animals called conodonts, believed by many to be early vertebrates. Brachiopods (clam-like animals), trilobites, echinoderms (sea lilies), gastropods (snails), and trace fossils (burrows created by unknown organisms) have also been found in Deadwood Formation cores (Hoganson 2006).

During most of the Paleozoic and Mesozoic Eras, from about 570 million until about sixty-five million years ago, North Dakota was covered by warm, shallow seas bordered by marine lagoon and estuary habitats, in some cases similar to areas in the Caribbean near the Bahamas today (Gerhard et al. 1982). During this time there were also periods when North Dakota was dry land. It is known that seas covered the state during the Paleozoic because the types of rocks—mostly limestone, dolomite, shale, siltstone and evaporates—and fossils indicate marine environments. Most of the fossils are remains of invertebrate animals such as gastropods, bivalves (clams), brachiopods, corals, stromatoporoids (sponge-like animals), trilobites, and echinoderms. The Devonian-Mississippian Bakken Formation (about three hundred million years old) has yielded many of these fossils. Approximately fifty species of invertebrates, plants, trace fossils, and conodonts have been discovered in that formation (Thrasher n.d.)

At the beginning of the Paleocene, about sixty-five million years ago, warm, shallow oceans covered much of central and eastern North Dakota, and huge forested swamplands similar in many ways to today's Florida Everglades existed in the western part of the state. Plant fossils indicate that the climate was warm-temperate to tropical, again probably resembling that of the present-day American Southeast. During this time, sediments eroded from the rising Rocky Mountains were carried by rivers to western North Dakota and deposited in river channels

and floodplains. Volcanic ash, generated by volcanoes in the western part of the country, was occasionally blown as far east as North Dakota and deposited on the landscape and in the lakes and swamps. The sediments turned into sandstone, siltstone, mudstone, claystone, and lignite, and are referred to as the Ludlow, Slope, Bullion Creek, Sentinel Butte, and Golden Valley Formations (Hoganson 2006)

The Fort Berthold Reservation is situated within the Sentinel Butte and Golden Valley Formations. Both formations preserve significant assemblages of fossil plants and vertebrates, as well as mollusk and insect fossils (Hickey 1977). Plant fossils collected from throughout the formations include floating and rooted aquatic plants such as *Salvinia*, *Nelumbo* and *Isoetes*, and lowland forest plants such as the ferns *Onoclea* and *Osmunda*, the conifers *Glyptostrobus* and *Metasequoia*, and the dicots *Platanus* and *Cervidiphyllum* (Hickey 1977) The vertebrate fossils collected include the remains of mammals such as *Coryphodon*, *Hyracotherium*, *Homogalax*, *Sinopa*, *Didymictis*, *Hyopsodus*, *Paramys* and others; there are also remains of fish, amphibians, and reptiles such as *Trionyx*, *Peltosaurus*, and four genera of crocodilians including *Borealosuchus* and *Champsosaurus gigas* (Hickey 1977; Hoganson 2006). Invertebrate fossils include shells of freshwater mollusks such as *Viviparus*, *Unio*, *Hydrobia*, and *Planorbis* and snails such as *Campeloma* and *Planorbis planoconvexus* (Hickey 1997; Hoganson 2006).

Under the Paleontological Resources Preservation Act (PRPA) of 2009 (16 U.S.C. 470aaa – aaa-11), paleontological resources, which includes any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, are protected. PRPA does not apply to state, private, or Tribal lands.

Environmental Effects of the Proposed Action

Because the proposed action includes soil-disturbing activities, there is potential for encountering paleontological materials during construction actions. Reclamation and/or the Tribe will contact the North Dakota Geological Survey Fossil Resource Management Program to assist with identifying areas that may contain paleontological resources. If a sensitive resource is identified in proximity to the project area, the resource will be avoided, and the nearby ground disturbance monitored by qualified personnel. The monitoring will consist of an examination of the exposed area, including the spoil or storage piles at key times. These times are dependent on the activity, but typically are when bedrock is initially exposed, occasionally during active excavation, and when the maximum exposure is reached and before backfilling has begun. This monitoring and spot-checking must be performed by a permitted paleontologist. The paleontologist has the authority to require a halt in activity at the location while a suspected find is evaluated and reported if necessary.

If unknown paleontological resources were discovered during construction activities, construction would be halted until Reclamation's Dakotas Area Office archeologist is notified and appropriate consultations are completed. A professional paleontologist will be contacted to determine the significance of the find and any mitigation measures will be implemented prior to the project moving forward in the vicinity of the find. Unauthorized collecting or digging, vandalism, or other methods of destruction to paleontological resources are not permitted. PRPA does not apply to state, private, or Tribal lands. Therefore, Reclamation, the Tribe, and the appropriate Federal Agency (land manager), would need to be notified if the project discover evidence these types of activities on project lands. Additionally, Reclamation will make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, FBRWS Phase III would not be built. If the project is not built, there would be no effect to paleontological resources.

Socioeconomics

The socioeconomic analysis focuses on the Fort Berthold Reservation compared to surrounding counties. Since census data is lacking for the South Segment specifically, using nearby counties is a surrogate for trends that are occurring in the region.

Affected Environment

Population and Projected Growth

Based on U.S. Census Bureau data, the population of American Indian residents living on the Fort Berthold Reservation has increased since 1980, especially between 2010 and 2014. (**Table 8**).

Table 8. Fort Berthold Reservation Population Change Over Time

Source: Bartlett & West (2006), US Census Bureau (2023)

Year	American Indian	Other	Total
1980	2640	2937	5577
1990	2999	2396	5395
2000	3986	1929	5915
2010	4556	1785	6341
2014	4608	2582	7190
2020	5537	2813	8350

Tribal enrollment numbers support the trend of increasing American Indian population growth. According to the 2006 Engineering Report and the BIA, tribal enrollment in the Three Affiliated Tribes has increased from 7,200 members in 1986 to 9,750 members in 2000, and by 2023 up to 10,249. It is estimated that approximately half of the new enrollees reside within the Reservation (Bartlett & West 2006), which is a trend that remains in 2023 (BIA). Conversely, the population of non-American Indian residents decreased between 1980 and 2010, but sharply increased in the period between 2010 and 2014 and increased again slightly by 2020; this phenomenon is likely due to increased oil and gas development in these times.

In the broader context of North Dakota, the Reservation is part of a group of counties that have seen population level effects as a result of the ongoing oil and gas boom (**Table 9**). Oil producing counties and the Reservation show higher growth rates from 2000-2015 than non-oil producing counties. Mercer County, which lies outside of the concentrated oil and gas development, showed the smallest populations increase of 3.4 percent compared to other counties in the area. Conversely, McKenzie County, within the oil patch, showed an increase in population of 156.1 percent. Reservation-wide, the population increased by 41.1% during 2000-2020 (2015 data was not available Reservation-wide). Since the Reservation lies within the oil patch, the population increase in part may be a result of oil and gas development.

Table 9. Population and Demographic Trends for Billings, Dunn, McKenzie, McLean, Mercer, and Mountrail Counties compared to the Reservation and North Dakota Source: US Census Bureau 2023b, US Department of Commerce 2020 Note: Data for the Fort Berthold Reservation was not available for 2015, so 2014 data was substituted to show general trends

Location	Population in 2000	Population in 2010	Population in 2015	Population in 2020	Percent Change 2000-2020	Predominant Group 2020 (percent of total) ²	Predominant Minority Group (percent of total)
Billings	888	783	936	945	6.4	Caucasian (94.6)	Asian (0.63)
Dunn	3,600	3,536	4,646	4,095	13.7	Caucasian (90.6)	Black or African American (0.89)
McKenzie	5,737	6,360	12,826	14,704	156.3	Caucasian (72.3)	Black or African American (1.4)
McLean	9,311	8,962	9,744	9,771	4.9	Caucasian (86.0)	American Indian (8.2)
Mercer	8,644	8,424	8,853	8,350	3.4	Caucasian (91.2)	American Indian (2.3)
Mountrail	6,631	7,673	10,331	9,809	47.9	Caucasian (56.1)	American Indian (28.9)
Fort Berthold Reservation	5,915	6,341	7,190 ³	8,350	41.1	American Indian (66.3) ³	Caucasian (21.7) ³
Statewide	642,200	672,591	756,927	779,094	21.3	Caucasian (82.9)	American Indian (4.9)

Economic Conditions

Compared to other counties in the region, the Reservation has a lower median household income and per capita income compared to other counties in the region (**Table 10**). In addition, the unemployment rate and percentage of individuals living below the poverty level is higher than the nearby counties and statewide.

Table 10. Employment and Income in the Analysis Area

¹United States Department of Agriculture 2023, ²U.S. Department of Agriculture 2021, ³United States Census Bureau, * United States Bureau of Statistics 2023.

Location	Individuals living below poverty level (2020) ¹	Unemployment Rate (2021) ²	Median Household Income (2020) ³	Per Capita Income ³ (2020)
Billings	10.0%	2.9%	\$76,478	\$38,026
Dunn	10.0%	3.3%	\$73,722	\$47,472
McKenzie	7.4%	5.5%	\$84,705	\$40,536
McLean	8.4%	3.7%	\$70,835	\$36,728
Mercer	8.0%	4.7%	\$79,608	\$37,725
Mountrail	11.0%	3.5%	\$68,465	\$36,141
Fort Berthold Reservation	21.1%	14%*	\$60,929	\$27,951
Statewide	10.2%	2.1%*	\$64,289	\$36,497

Environmental Effects of the Proposed Action

By increasing the water supply, FBRWS Phase III would provide many benefits to the residents (tribal and non-tribal) within Fort Berthold Reservation. An increased capacity of the water system

would allow the FBRWS to expand to include rural residents in all segments. The Proposed Action would provide a stable, quality water supply eliminating uncertainty or gaps in water availability that come from inconsistent or unsafe water supplies for rural residents living within Fort Berthold Reservation. In turn, this stable water supply may make Fort Berthold Reservation increasingly attractive to new businesses, private investments, and industry, thus providing the potential for improving and growing the local and regional economy. Investments in a stable, reliable, and safe water supplies have been shown in some regions to result in economic benefits due to reductions in adverse health conditions and associated costs. (World Health Organization 2022)

Recreation, tourism, and rural development would all benefit by the improvement of rural water supplies. Currently, groundwater sources limit the water quality and availability for rural residents and for rural recreational opportunities. Construction of FBRWS Phase III would provide the opportunity to expand FBRWS service into areas that are currently uninhabitable or unusable due to the lack of a good water source. Thus, rural development, expansion of rural-based recreational businesses such as fishing outfitters, and recreational housing along Lake Sakakawea would be possible. FBRWS Phase III could contribute and serve anticipated rural population growth of the area.

With an increased stable water supply in rural areas, livestock production would also be positively affected. The 2006 Engineering Report and the 2021 Master Plan assumed that livestock watering would be part of the FBRWS expansion within Fort Berthold Reservation. Reliable water supplies for livestock could have several beneficial effects, all of which provide opportunities for increased revenue, including: improved access to rangeland limited by water source; improved options for rangeland management such as prescribed grazing and ability to expand herds. Future livestock water opportunities will be limited to rangeland which is with in proximity of existing and future FBRWS pipeline distribution systems. Generally, expanding livestock watering access is limited to 1 – 2 miles from the FBRWS pipeline due to the associated additional costs.

Economic benefits would be expected relatively soon after the projects are completed in the coming years. While economic benefits may not be drastic or occur immediately, they would be long-term and increase steadily over the life of the FBRWS and beyond. Improving water supply for Fort Berthold Reservation would be expected to benefit both tribal and non-tribal members.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the current FBRWS would eventually fall behind the growing needs of the communities within Fort Berthold Reservation.

Schools, government, hospitals, businesses, and recreation/tourist attractions using water would continue to operate with unreliable water supplies. Having a reliable water supply enhances production and growth, thereby increasing direct and indirect (tax) revenues for existing entities and local government. Increased revenue flows into communities, improves school facilities, and encourages diverse and funded programs. Opportunities for investments in high water demand facilities such as hospitals and new neighborhoods would increase. The agricultural sector, particularly ranching, would continue to be negatively affected by water quality and supply, since livestock experience lower production rates and reduced health due to poor quality of water. Growth in the ranching sector would be limited to existing conditions or be reduced if land and livestock do not continue to attract younger generations of ranchers. By extension, rural residents would continue to rely on ground water wells or cisterns, which may not meet SDWA water quality standards.

If populations continue to grow as predicted in the 2006 Engineering Report, water availability and system capacities would be increasingly strained. Once water availability and quality reach a level that is unsatisfactory for individuals and families, the population may begin to decline if households choose to relocate to other areas with more reliable and desirable water conditions. Relocations would have a negative impact on the local economy and could affect cultural and family cohesion for tribal members.

The No Action Alternative would limit economic benefits to the Tribe, and rural Reservation residents would continue to rely on unreliable water supplies with poor water quality.

Climate Change

Predicted changes in precipitation patterns from climate change modeling could affect Missouri River flows and operation of the Garrison Dam at Lake Sakakawea, the sole water source of the FBRWS. Climate change is analyzed here in two ways: 1) how climate change may be affected by implementation of FBRWS Phase III and 2) how the FBRWS may be affected by climate change.

It is important to note that climate change projections have geographic and temporal variation based on a Reclamation (2011) assessment. Climate studies and models are an amalgamation of various climate-related data, resulting in a generalized average of climatic variables. As such, each of these variables carries with it an inherent uncertainty. This uncertainty tends to increase with time; estimates of climate projected out 100 years have a lower confidence than projections for the next 10 to 20 years. Even with this uncertainty, climate studies and models provide a functional planning tool to evaluate potential future activities.

CEQ released updated NEPA guidance on GHG emissions on January 9, 2023. This new guidance was directed by Executive Order 13990 to assist federal agencies to better assess climate impacts. The updated guidance supports broad scope programmatic reviews such as this PEA and allows for planning flexibility and additional project review in the future.

Contributors to Climate Change

Intergovernmental Panel on Climate Change (IPCC) scientists and experts conclude that the observed changes in global surface temperature are very likely due to observed increases in anthropogenic greenhouse gas (GHG) concentrations, which trap heat in the atmosphere (IPCC 2023). Carbon dioxide (CO₂) is an example of a GHG that occurs naturally and is emitted to the atmosphere through both natural processes and human activities. Other GHGs are synthesized and emitted solely through human activities (e.g., fluorinated gases). The principal GHGs identified by the EPA that enter the atmosphere due to human activities are CO₂, methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. CO₂ is the primary GHG emitted through historical and continuing rising contributions from unsustainable energy use, land use and land-use changes, and high rates of consumption. The EPA collects data on and encourages limiting or reducing emissions of anthropogenic sources of GHGs to the earth's atmosphere (USEPA 2023).

Affected Environment

Climate change is mainly due to earth's warming temperatures resulting from increasing amounts of carbon dioxide and other heat-trapping greenhouse gases in the atmosphere. According to historical long-term temperature trends, the temperatures in the northern Great Plains Region have risen faster than surrounding regions. North Dakota historical records show an increase of 0.26 degrees F

per decade over the last 130 years is the largest for any state in the Great Plains Region (Reclamation 2013).

In North Dakota, climate change may result in increased demand for water, and it is expected that rainfall and runoff amounts will also increase. In downstream states, droughts may become more severe, resulting in an increase of water releases from upstream dams, including those in North Dakota possibly resulting in reduced water availability. The state is likely to see increased flooding from climate change effects such as greater river flows, increasing precipitation, and more severe storms. More intense, heavier storms are also expected (EPA 2016).

Effects on agriculture are expected to be both positive and negative. Warmer temperatures have already extended the growing season by 30 days since the early 1900's, and this trend is expected to continue. Warmer temperatures may also result in increased crop yields, and the fertilizing effect of increasing amounts of carbon dioxide may have the same result. Precipitation increases at the beginning of the growing season could maintain soil moisture for the crops for an extended period. Potential negative effects to agriculture include: 1) excessive spring precipitation resulting in crop fields that are too wet to plant, 2) increasing temperatures may reduce yields of wheat, and 3) warmer winters may promote pests and higher amounts of weeds. In dry years, higher temperatures could result in drier soils, and more days over 100 degrees might stress crops, especially during drought years (EPA 2016).

Grassland ecosystems may see increased productivity with rising amounts of carbon dioxide. It is likely that multiple ecological processes may be disrupted and many species' geographic ranges will shift because of climate change. Earlier growing season are causing flowers to bloom sooner, and small changes in plant development or animal migrations can disrupt many natural ecological processes (EPA 2016).

Multiple effects to human health are also expected from climate change. Vulnerable populations, especially children and the elderly, people with health problems, and those in poverty, will likely be most impacted from extreme heat waves. Increasing severe weather may also cause power failures, which can be especially dangerous to vulnerable populations and people living in remote areas. Illnesses and deaths due to cold weather are likely to decline. Finally, the EPA states that the length and severity of the allergy season is likely to worsen due to longer growing seasons, with plants like ragweed being active for a longer timeframe (EPA 2016).

Fort Berthold Reservation is within the Northwestern Glaciated Plains and Northwestern Great Plains Ecoregions (Bryce et al. 1998). Average annual precipitation is approximately 16 inches. Mean temperatures range from 13 degrees Fahrenheit in January to 69 degrees Fahrenheit in July (High Plains Regional Climate Center 2023).

Reclamation (2012) simulated changes in monthly runoff in the Missouri River basin under 112 downscaled climate and hydrology projections. At Garrison Dam, the median monthly changes show increased flow from December to June and decreased flows from July to November, with a net increase in mean annual flow (median change in mean annual flow) of about 6 percent during the 2040 to 2069 period as compared to the 1950 to 1999 baseline.

Figure 17 shows the difference in simulated end-of-month Lake Sakakawea elevations between the baseline (no climate change) and three climate change hydrologic projections. The three projections displayed (25th percentile, 50th percentile [median], and 75th percentile) represent the middle half of the 112 projections that were developed. The median projection provides a sense of the anticipated effect, while the 25th percentile (lower runoff) and 75th percentile (higher runoff) display uncertainty

associated with the projections. The median projection results in higher reservoir elevations (greater storage) in 88 percent of the months over the 50-year period of analysis. The 25th-percentile projection is generally similar to the baseline, with slightly lower reservoir elevations in 65 percent of the months. The 75th-percentile projection shows consistently higher reservoir elevations, with some months more than 20 feet higher than the baseline simulation. These results suggest that Lake Sakakawea elevations and reservoir storage are likely to increase in the future as a result of climate change.

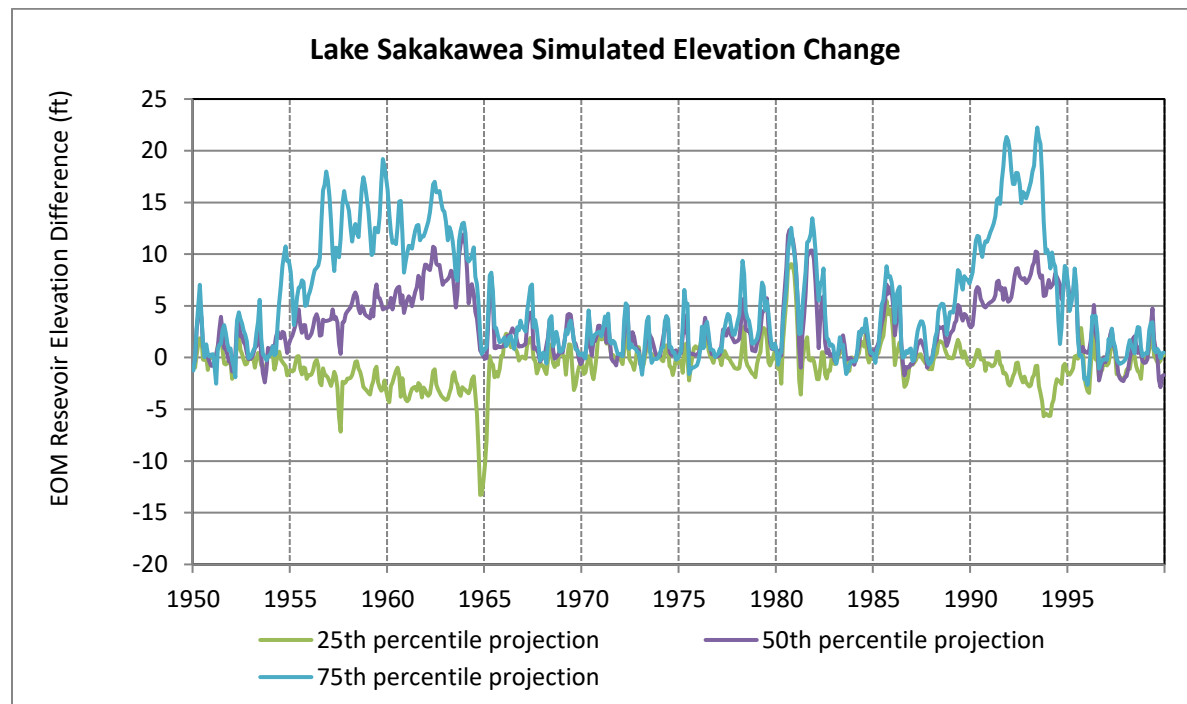


Figure 17. Differences in Simulated End of Month Lake Sakakawea Water Surface Elevation for Three Climate Change Projections from the Baseline (No Climate Change)

Note: Reference hydrologic period is 1950 – 1999. Source: Modified from Corps of Engineers 2013.

Environmental Effects of the Proposed Action

FBRWS Phase III Effects on Climate Change

Temporary direct emissions of GHGs would occur during construction of any of the listed activities. Combustion emissions from engine exhaust of construction equipment would include SO₂, NO₂, CO, volatile organic compounds (VOCs), and GHGs. Contractors would be required to maintain equipment exhaust systems to factory or better specifications to minimize emissions and noise. Most emissions produced during the construction period of site-specific project work would be temporary and would not produce a measurable increase of GHG emissions within Fort Berthold Reservation or surrounding areas. Additional residential communities, businesses, possible industrial developments stemming from increased water availability all have the potential to increase GHG emissions. Other foreseeable GHG emissions on Fort Berthold Reservation include emissions from the oil and gas industry, increases in population, and increased infrastructure and construction needs. Although increased emissions may result from implementation of Phase III features, these increases are not predicted to result in measurable or significant increases in GHGs.

Climate Change Effects on FBRWS

If temperatures continue to rise, demand for water may increase in the project area. Changes in timing of precipitation could also result in increased or decreased water demands, depending on time

of year precipitation and snowmelts. Climate changes could also result in increased water withdrawals from Lake Sakakawea.

Effects of FBRWS Phase III on Lake Sakakawea would be minor, with an increase of about 1,000 acre-feet to an annual withdrawal of approximately 4,100 acre-feet as compared to the 23.5 million acre-feet in Lake Sakakawea or 0.017 percent of the average lake volume. Lake Sakakawea would still be able to provide a reliable source of water, and it appears that the storage of the Lake is predicted to increase with climate change, negative impacts from climate change on FBRWS are not anticipated.

Indian Trust Assets

Affected Environment

Indian Trust Assets (ITAs) are “legal obligations that originate from the unique, historical relationship between the United States and Indian tribes” (DOI Secretarial Order 3335 - Reaffirmation of the Federal Trust Responsibility to Federally Recognized Indian Tribes and Individual Indian Beneficiaries issued August 24, 2014). Further responsibilities are renewed and described in Joint Secretarial Order 3403 - Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters issued November 15, 2021. The order describes the Interior Departments responsibility “In managing Federal lands and waters, the Departments are charged with the highest trust responsibility to protect Tribal interests and further the nation-to-nation relationship with Tribes.” The Secretary of the Interior is the trustee for the United States on behalf of Indian tribes. ITAs include land, minerals, timber, ethnobotanical resources, hunting and fishing rights, water rights, and in-stream flows and may be located on or off-Reservation lands. Reclamation, as a representative of the Secretary of the Interior, must evaluate whether the Proposed Action may affect ITAs. This Secretarial Order reaffirms the legal trust relationship and the government-to-government relationship between the Secretary of the Interior and Indian tribes. Examples of ITA include trust lands, hunting and fishing rights, and Indian water rights (Reclamation 1993).

Trust lands are present within Fort Berthold Reservation and likely would be crossed by rural water development projects. Trust lands within Fort Berthold Reservation are administered by the Bureau of Indian Affairs and include both Tribal and allotted parcels.

Indian water rights are the primary ITA associated with implementation of FBRWS Phase III. The Three Affiliated Tribes water right to the Missouri River stems from the 1908 Supreme Court decision in *Winters v. the United States*, which enunciated the Winters Doctrine. In *Arizona v. California* (1963) the U.S. Supreme Court held that water allocated should be sufficient to meet both present and future needs of the reservation to assure the viability of the reservation as a homeland. Winters Doctrine water rights have an appropriation date based on the date the reservation was established. Case law also supports the premise that Indian reserved water rights are not lost through non-use. The current FBRWS annual water withdrawals from Lake Sakakawea is approximately 3,100 acre-feet but will vary depending on weather conditions or industrial water sales. The Three Affiliated Tribes have not quantified their water rights under the Winter's Doctrine. The current withdrawals (approximately 3,100 acre-feet) and any future withdrawals would be considered should the Tribe decide to quantify their water rights in the future. The Tribe has Winters Doctrine water rights from the Missouri River, and Lake Sakakawea is the only water source in the area with a reliable quantity of quality water.

Even though this action would affect the Three Affiliated Tribe's ITA, implementation of FBRWS Phase III it at their request.

In *Arizona v. California* (1963) the U.S. Supreme Court held that water allocated under the Winters Doctrine should be sufficient to meet both present and future needs of the reservation to assure the viability of the reservation as a homeland. These rights are also not forfeited by non-use. Other tribal reserved water rights in the Missouri River Basin that have either been quantified or are being quantified are:

- State of Wyoming settlement with tribes of the Wind River Reservation (adjudicated under the McCarran Amendment)
- Compact between the state of Montana and the tribes of the Fort Peck Reservation (awaiting congressional approval)
- Compact between the state of Montana and the tribes of the Fort Belknap Reservation (ratified by the state legislature)
- Compact between the state of Montana and the Crow tribe (ratified by the state legislature)
- Compact between the state of Montana and the tribes of the Rocky Boys Reservation (awaiting congressional approval)
- Compact between the State of Montana and the Northern Cheyenne Tribe (The Northern Cheyenne Reserved Water Rights Settlement Act [Public Law 102-374])

The Corps is responsible for operation of reservoirs within the Missouri River basin, including Lake Sakakawea. Under Winter's Doctrine, the Corps recognizes that American Indian Tribes are entitled to water rights in streams running through and along Reservation boundaries. The Three Affiliated Tribes, with the July 27, 1866 treaty with the U.S. Government (Agreement at Fort Berthold, 1866) and the subsequent establishment of the Fort Berthold Indian Reservation, have unquantified water rights to the Missouri River main-stem flow. The Corps recognizes tribal water rights to the Missouri River regardless of whether these rights have not been quantified or adjudicated and in effect, if the Three Affiliated Tribes adjudicated their water right on Lake Sakakawea, the Corps would consider it an existing depletion and adjust operations accordingly.

“When a Tribe exercises its water rights, these consumptive uses will then be incorporated as an existing depletion. Unless specifically provided for by law, these rights do not entail an allocation of storage. Accordingly, water must actually be diverted to have an impact on the operation of the System. Further modifications to System operation, in accordance with pertinent legal requirements, will be considered as Tribal water rights are exercised in accordance with applicable law (Corps 2006 Missouri River Main stem Reservoir System Master Control Manual, Missouri River Basin, Appendix E, page 10.)

Environmental Effects of the Proposed Action

Although the Proposed Action would affect the Three Affiliated Tribe's Winters Doctrine water rights, it would be for the benefit of the Tribe and at their request. Projects and activities included in the implementation of FBRWS require real property transactions involving Tribal trust and allotted lands. The transactions would be easements and land acquisitions. This type of transaction diminishes the utility of trust lands to the grantor permanently while FBRWS is operating. Reclamation would provide fair market compensation to individual tribal allottees and would provide benefit to residents across Fort Berthold Reservation by providing access to a safe supply of potable water. The benefits to individual fee-patent landowners and the Fort Berthold Reservation community at large outweigh the negative impacts from the easement. Furthermore, direct impacts

to the land would be temporary during construction, with reclamation occurring after construction is complete.

The Proposed Action would result in beneficial effects to the Three Affiliated Tribes by increasing the potable water supply throughout Fort Berthold Reservation. Also, because Winters Doctrine water rights have a priority date of when the reservation was established and not when Winters Doctrine water rights are quantified, FBRWS Phase III is not anticipated to adversely affect other tribal water rights in the Missouri River Basin.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, Tribal trust and allotted lands would not be temporarily disturbed and easements through these parcels lands would not diminish the owners use of these lands. However, benefits would not be realized to tribal members and landowners as additional water supplies would not be made available to the Three Affiliated Tribe, its tribal members, and other residents of the Fort Berthold Reservation for MR&I uses as water demands continue to increase.

Environmental Justice

EO 12898 (1994) requires that measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities by pursuing fair treatment and meaningful involvement of minority and low-income populations. Fair treatment means that minorities and low-income groups would not bear a disproportionate share of negative human health or environmental impacts. Meaningful involvement means that affected populations have the opportunity to participate in the decision process and their concerns are considered. In 2023, EO 14096 was signed, which supplemented EO 12898 to expand the definition of environmental justice and implement a “whole-of-government” approach to address these issues.

Affected Environment

Tribal members and other American Indians living on the Fort Berthold Reservation qualify as a minority and low-income population pursuant to Environmental Justice. The American Indian population (including Alaskan Natives, grouped together in the 2023 Census data) on the Reservation is 4,867 and are 64.5% of residents on the Fort Berthold Reservation (U.S. Census Bureau 2023a). American Indians comprise only 5.3 percent of the total population of North Dakota. The Fort Berthold Reservation has the highest rates of individuals living below poverty level and the highest unemployment rate (14%) compared to surrounding counties and the statewide average (2.1%) as previously shown in **Table 8**. The Fort Berthold Reservation has a median household income of \$27,951, \$8,546 lower than the statewide average. Native American individuals and households living on the Fort Berthold Reservation are considered distinctly disadvantaged.

Reclamation staff also reviewed the EPA’s online Environmental Justice Screening and Mapping Tool (2023b) on July 7, 2023, which showed that the Fort Berthold Reservation had higher percentiles on several indices as compared with most surrounding areas. These indices included environmental justice, socioeconomic, health disparities, and critical service gaps. The environmental justice index highlights block groups with the highest intersection of low-income populations, people of color, and a given environmental indicator. Environmental justice indices where the Fort Berthold Reservation had higher percentiles compared with surrounding areas included: levels of ozone, air toxics cancer risk, toxic releases to air, lead paint, risk management plan facility proximity, and underground storage tanks. Socioeconomic indexes where the Fort Berthold Reservation had higher percentiles than surrounding areas included: demographic index,

supplemental demographic index, people of color, low income, unemployment rate, and limited English speaking. The health disparity index showed higher percentiles for the Fort Berthold Reservation when it came to the following metrics: low life expectancy and asthma. The critical service gap index showed higher scores for the Fort Berthold Reservation in the following categories: lack of health insurance, transportation access, and food desert. These metrics demonstrate the many aspects of life where tribal members on the Reservation have substantial disadvantages as compared with surrounding areas.

Disparities are present among different populations when it comes to accessing safe drinking water. According to Roller et al. (2019), at the national level, Native Americans are 19 times more likely to lack plumbing and running water as compared to white households.

According to the World Health Organization (WHO), safe drinking water is an essential component of public health (WHO 2022). Contaminated drinking water can cause illness or death from waterborne diseases or chemical exposure (Centers for Disease Control and Prevention [CDC] 2023, EPA 2023a). Contamination threats to drinking water include the following: industrial and agricultural sources, human and animal waste, inadequate or damaged treatment and distribution systems, natural sources such as geological formations, aging water infrastructure systems, hazardous waste dumps, leaking underground storage tanks, increases in unconventional oil and gas drilling, extreme flooding in sewer systems, agricultural fields, and livestock farms (EPA 2023a, CDC 2023, DiGiulio and Jackson 2016, Pichtel 2016, EPA 2023c).

On Fort Berthold Reservation, the Tribal Fort Berthold Rural Water is the entity responsible for providing potable water to all Fort Berthold residents. In 2022, they reported no EPA violations (Fort Berthold Rural Water 2022).

Potential Effects of the Proposed Action

The Proposed Action would not result in additional risks or adverse environmental impacts to American Indians living in the project area. Fort Berthold Reservation residents would benefit from implementation of FBRWS Phase III activities with improved water delivery and access, which could indirectly improve economic conditions for both individual residents and for the community. The installation of water connections to home sites, master meters to rural developments, and updated water treatment facilities all provide reliable sources of drinking water. With the construction of modern water treatment plant facilities within Fort Berthold Reservation, contamination threats may be reduced due to improvements in potable water treatment systems and updates to aging water infrastructure systems. The implementation of Phase III would result in improved access to clean, safe, reliable water resources and improve public health on the Fort Berthold Reservation.

One potential impact of the FBRWS Phase III construction activities is the addition of more Project infrastructure and whether that would cause any undue burdens on the Three Affiliated Tribes in operating and maintaining (O&M) its water system. Reclamation recognizes that O&M responsibilities and other associated costs will likely increase as a result of system expansion, and that increased federal O&M funding may be needed. Any needed adjustments in federal O&M funding will be determined by the Secretary of the Interior.

Potential Effects of the No Action Alternative

The No Action Alternative would not provide increased water supplies to residents living in Fort Berthold Reservation and therefore may disproportionately negatively impact the minority and low-income population. Water resource development is currently occurring across all regions of North Dakota. Non-Tribal projects such as Northwest Area Water Supply, Southwest Water Pipeline

Project, Red River Valley Water Supply, and Garrison Diversion continue to improve, expand, and supply water needs as populations and demand increase. Tribal needs are ever increasing along-side all other communities in North Dakota.

Inadequate water supplies can result in stagnated business development in both the industrial and agricultural commerce markets. Lack of reliant water sources can reflect negatively upon proposed tribal business models and side-track investors.

There are currently rural residents of Fort Berthold Reservation who still rely on well and cistern water sources for servicing their homes. These families are disproportionately exposed to climate fluctuations such as droughts, water contamination, and seasonal access and maintenance challenges.

The implementation of Phase III has the potential to increase business expansion, fuel the job market with new and increasing opportunities for residents, and increase quality of health, life, and security for rural families.

Summary Overview of Project Effects

Table 11 summarizes the potential environmental effects to Wildlife and Fisheries, Surface Water, Threatened and Endangered Species, Land Resources, Cultural Resources, Paleontological Resources, Socioeconomics, Cultural Resources, Climate Change, Indian Trust Assets, and Environmental Justice. Most impacts identified are of a temporary nature.

Table 11. Summary of Potential Temporary and Permanent Effects of the Proposed

Resource	Temporary Impacts	Permanent Impacts
Wildlife and Fisheries	Temporary disturbance to habitats, avoidance, and relocation to adjacent habitats.	Net loss of habitat from permanent infrastructure
Surface Water Resources	No effects anticipated	Missouri River withdrawals increase from 3,100 to 4,100 ac-ft/year
Threatened and Endangered Species	Temporary disturbance to native habitats along ROWs; potential habitat for T&E species would be surveyed for presence and avoided if inhabited	No effects anticipated; occupied habitat is avoided.
Land Resources	Construction disturbance to soils and vegetation in project footprints	Long term conversion of rangeland and cropland for some projects.
Socioeconomics	No effects anticipated	Increased water supplies and improved water delivery would benefit Fort Berthold Reservation
Cultural Resources	No effects anticipated	No effects anticipated
Paleontological Resources	No effects anticipated	No effects anticipated
Climate Change	Undetectable increase in vehicle emissions (GHGs) during construction	No effects anticipated.
Environmental Justice	No effects anticipated	Increased water delivery would improve access to clean, safe, reliable water resources and improve public health.

Indian Trust Assets	Construction disturbance to soils and vegetation within the project footprints	Property easements could potentially diminish land value. Water rights put to beneficial use.
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Temporary Effects

Temporary effects from projects included in FBRWS Phase III are primarily stemmed from the construction activities. Temporary disturbance to soils and vegetation would occur as a result of heavy equipment working within the Project Area. Once construction is complete, all temporary workspaces will be reclaimed and restored to near original conditions, as practicable. Reseeding and plantings would occur in the late fall or early spring. In addition, all construction activities will follow the environmental commitments included in the FBRWS Phase III alternative.

Permanent Effects

Several activities included in the FBRWS Phase III Alternative would involve construction of permanent above ground infrastructure on the Fort Berthold Reservation. Planned FBRWS Phase III Prospective project areas on FBIR are typically used for either cattle or grain crop production. Permanent infrastructure in these areas would be permanently removed from agricultural production. Long-term withdrawals from Lake Sakakawea would result in an annual depletion increase by about 1,000 acre-feet per year; a small and insignificant withdrawal increase (less than 0.02%) from Lake Sakakawea and will not affect the Garrison Dam operations (**Table 12**).

Residents of Fort Berthold Reservation would benefit from improved water delivery system, improved water quality, and increased water supply. In addition, recreation, tourism, rural development, public health, industrial sales of water, and livestock operations currently limited by available groundwater sources and may benefit from the expanded service by and result in potential economic gains on the Fort Berthold Reservation and in surrounding areas.

Table 12. Summary Effects Comparison of the No Action and Proposed Action

Resource	Description	No Action	Proposed Action
Surface Water Resources	<i>Depletions</i>	No change	Increase of about 1,000 acre-feet/year to withdrawal from Lake Sakakawea, increasing total FBRWS withdrawals to 4,100 acre-feet/yr.
	<i>Temporary sedimentation and contamination of surface waters</i>	No change	Potential temporary increases in sedimentation from construction related disturbances. Construction BMPs would be implemented to minimize any potential increases.
Wildlife and Fisheries	<i>Disturbance of Habitat</i>	No change	Terrestrial and aquatic habitats may be temporarily impacted. Some projects would result in a net loss of suitable grassland/upland habitats.
	<i>Direct Mortality</i>		
Threatened and Endangered Species	<i>Disturbance of Habitat</i>	No change	Potential habitat will be avoided, and no adverse effects are anticipated for listed species.
	<i>Direct mortality</i>	No change	Suitable habitats will be avoided and no incidental take is anticipated.

Resource	Description	No Action	Proposed Action
Land and Vegetation Resources	<i>Erosion, compaction, mixing, contamination</i>	No change	Potential increases during activities within construction footprints. Construction BMPs would be implemented to minimize any potential increases.
	<i>Impacts to Native Habitats</i>	No change	Potential temporary effects during construction. Construction BMPs would be implemented to minimize any potential increases.
Cultural Resources	<i>Impacts to Cultural Resources</i>	No change	No adverse effects are anticipated. Construction BMPs would be implemented in areas with potential historic resources and Traditional Cultural Properties.
Paleontological Resources	<i>Impacts to Paleontological Resources</i>	No change	No adverse effects are anticipated.
Socio-economics	<i>Population</i>	Fort Berthold Reservation population may decline if unreliable and limited water supplies result in relocations.	A more reliable and increased water supply would result in increased capacity for sustained growth and development on the Fort Berthold Reservation.
	<i>Agricultural sector</i>	Potential for decreased livestock health and production and a decreased number of producers/ranches with the Fort Berthold Reservation boundaries.	Predicted improvements in livestock health and production. Increased opportunities for improved grazing access, and retainment of younger generations.
	<i>Rural development</i>	No change. However, potential for additional rural development is limited.	Potential increases in rural development and expansion into additional parts of the Fort Berthold Reservation.
	<i>Property values</i>	No change or decrease in Tribal allotments and private (fee-patent) property values on the Fort Berthold Reservation.	Potential to decrease property values along FBRWS easements but also potential to increase values properties with improved to reliable water supplies.
	<i>Private investment</i>	Deterrent; no change or decline.	Attraction; growth of new business and industry.
	<i>Overall economy</i>	Decline, vulnerable to downturns.	Stability, growth, diversity.
	<i>Trust resources</i>	Water right not exercised.	Water right put to beneficial use.
	<i>Water quality and supply</i>	Individuals and communities at disadvantage.	Equal Reservation-wide.
	<i>Disturbance of soils</i>	No change	Potential increase in sedimentation from construction related disturbance.
Climate Change	<i>Effects of FBRWS Phase III on Climate Change</i>	No change. Changes in global climate and regional weather patterns would continue.	Additional residential communities, businesses, industrial developments all have the potential to increase GHG emissions.

Resource	Description	No Action	Proposed Action
	<i>Effects of Climate Change on the Project</i>	Demand for water on tribal lands may increase. Changes to water storage in Lake Sakakawea based on predicted changes in hydrology.	FBRWS Phase III would reduce water storage in Lake Sakakawea by about 1,000 acre-feet/year when compared to the No Action Alternative.
Indian Trust Assets	<i>Land Resources</i>	No change	Disturbance to Tribal trust and allotted lands; easements may reduce land value.
	<i>Water Rights</i>	No changes	The current withdrawals and any future withdrawals would be considered should the Tribe decide to quantify their water rights in the future.
Environmental Justice	<i>Potable Water Delivery</i>	Stagnated business development in both the industrial and agricultural Tribal commerce markets. Residents disproportionately exposed to climate fluctuations such as droughts, water contamination, and seasonal access and maintenance challenges.	Improved capacity for sustained growth on the Fort Berthold Reservation, improved public health from improved water quality, and increased potential for rural and industrial development. Potential for potable water contamination is also reduced.

Chapter 4: Agency Consultation and Coordination

This chapter identifies the names and qualifications of the principal people contributing information to this PEA and a list of agencies contacted for comments on the proposed project. In accordance with Part 1502.6 of the CEQ regulations for implementing the NEPA, the efforts of an interdisciplinary team comprising technicians and experts in various fields were required to accomplish this study.

List of Preparers

A list of individuals with the primary responsibility for conducting this study, preparing the documentation, and providing technical reviews is contained in **Table 13**.

Table 13. List of Preparers

Affiliation	Name	Title	Project Role
Bartlett & West	Jack Fletcher	Project Engineer	Project development
Bureau of Reclamation	Ashley Persinger	Environmental Coordinator	Compliance Review Editor
Bureau of Reclamation	Chris Langland	Natural Resource Specialist	Endangered Species Act Compliance
Bureau of Reclamation	Andrea Gue	Environmental Division Manager	Compliance Review Editor
Bureau of Reclamation	Terry Stroh	Regional NEPA Coordinator	Quality Control/Quality assurance
Bureau of Reclamation	Denise Fischer	Civil Engineer	Project Development
Bureau of Reclamation	Corinna Hanson	Natural Resource Specialist	Compliance Review Editor
Bureau of Reclamation	Dean Karsky	Civil Engineer	Project Development
Bureau of Reclamation	Terence Stroh	Regional NEPA/ESA Coordinator	NEPA/ESA document review

Agency Coordination

To initiate early communication and coordination, Reclamation sent scoping letters to tribal, federal, state, and local agencies and other interested parties on May 24, 2023. The scoping package included a brief description of the preferred alternative and a Project location map. Pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, identification of issues and concerns was requested to ensure that social, economic, and environmental impacts are considered in the development of this Project. The scoping process included a 30-day comment period that ended on July 1, 2023. **Table 14** contains the list of agencies consulted during the scoping period.

Table 14. List of Agencies Consulted

Name/Title/Agency	Name/Title/Agency
Honorable Kelly Armstrong United States Congressman	Wendall Meyer, Federal Highway Administration
Honorable John Hoeven United States Senator	United States Department of Agriculture, Rural Utilities Service
Honorable Kevin Cramer United States Senator	Mary Podoll, State Conservationist, Natural Resource Conservation Service
Governor Doug Burgum, Office of the North Dakota Governor	Bill Peterson, State Historical Society of North Dakota
Jamie Azure, Honorable Chairman, Turtle Mountain Band of Chippewa	Cody Schulz, Director, North Dakota Parks and Recreation
Larus Longie Tribal Historic Preservation Office	Josh Teigen, Commissioner, North Dakota Dept. of Commerce
Greg Link, Conservation/Communications Chief, North Dakota Game and Fish Department	Ron Henke, Director, North Dakota Dept. of Transportation
President, North Dakota Chapter of the Wildlife Society	State Paleontology Dept., North Dakota Geological Survey

David Bruschwein, P.E. North Dakota Dept. of Health, Municipal Facilities	North Dakota Industrial Commission
Luke Toso, Field Supervisor, United States Fish and Wildlife Service	Scott Skokos, Executive Director, Dakota Resource Council
David Glatt, Director, North Dakota Department of Environmental Quality	Joseph Heringer, North Dakota Dept. of Trust Lands
Gregory Delzer, Dakota Water Science Center, United States Geological Survey, Rapid City. South Dakota	Luke Todd, Project Leader, Audubon National Wildlife Refuge
Loren Wickstrom, North Dakota Bureau of Land Management, Dickinson, North Dakota	Kathy Duttonhefner, North Dakota Parks and Recreation Dept.
Duane Dekrey, General Manager, Garrison Diversion Conservancy District	Sally Whittingham, Interim Dunn County Auditor
Sarah Hewitt, Executive Director, Audubon Dakota Chapter	Carmen Reed, Mercer County Auditor
Kerry Whipp, National Wildlife Federation	Erica Johnsrud, McKenzie County Auditor
Nathan Davis, Executive Director, Indian Affairs Commission	Stephanie Pappa, Mountrail County Auditor
Bismarck District, North Dakota Department of Transportation	Beth Knutson, McLean County Auditor
Edward C. Murphy, State Geologist, North Dakota Geological Survey	Marisa Haman, Ward County Auditor
Paul Bultsma, Ducks Unlimited	Joshua Gormley, Lake Manager, Garrison Project
Jason Renschler, Bismarck Corps Regulatory Office	Jon Eagle, Tribal Historic Preservation Office, Standing Rock Sioux Tribe
Sarah Coleman, Director, North Dakota Tourism Division	Janet Alkire, Honorable Chairwoman, Standing Rock Sioux Tribe
Monica Mayer, Councilwoman, MHA Nation	Mark Fox, Honorable Chairman, MHA Nation
Mervin Packineau, Councilman, MHA Nation	Fred Fox, Councilman, MHA Nation
Cory Spotted Bear. Councilman, MHA Nation	Robert White, Councilman, MHA Nation
Sherry Turner-Lone Fight, Councilwoman, MHA Nation	Stella Berquist, CEO, MHA Nation
Edmund Baker, Tribal EPA, MHA Nation	Lisa Lone Fight, Scientist, MHA Nation
Joseph Silveria, Director, Fort Berthold Rural Water	Dallas Fox-Osborne, Executive Assistant, Fort Berthold Rural Water
Pem Hall, Director, MHA Nation Water Commission	Allen Demaray, Tribal Historic Preservation Office, MHA Nation
Mark Herman, Regional Environmental Scientist, Bureau of Indian Affairs, Great Plains Region	Kenneth Graywater, Jr., Tribal Historic Preservation Officer, Spirt Lake Tribe
Jack Fletcher, Bartlett and West Engineers	Douglas Yankton, Sr. Honorable Chairperson, Spirt Lake Tribe

Eight responses were received during the initial scoping period. Scoping comments provided valuable insight used the evaluation of potential environmental impacts were referenced and

incorporated where appropriate resource analysis in the Affected Environment and Environmental Consequences Section of this document. **Appendix E** contains the scoping responses.

Chapter 5: Environmental Commitment and Mitigation Measures

Environmental commitments and mitigation measures would be implemented to:

(1) prevent, minimize, or offset the occurrence of, or potential for, adverse environmental effects and (2) ensure compliance with applicable Federal and State regulations designed to protect fish and wildlife resources, important habitats and sensitive areas, cultural and paleontological resources, human health and safety, and the public interest.

The Three Affiliated Tribes would ensure the environmental commitments are implemented in Phase III. All appropriate environmental commitments would be incorporated into each site-specific design, included in all construction contracts and specifications, and applied during construction and in O&M activities post-construction. An Interagency Environmental Review Team, with representation from Reclamation, FBRW, USFWS, BIA, qualified third party representatives, and others as appropriate, may be assembled to review environmental compliance in the field, as deemed appropriate. To ensure and assist with environmental compliance a Biological and Natural Resources Checklist has been developed and is included as **Appendix F**.

Over the past two decades, Reclamation has conducted public scoping and consultation with state and local governments associated with MR&I water supply projects throughout North and South Dakota which have resulted in development and implementation of proven methods that minimize or avoid adverse environmental effects during construction and O&M. Environmental commitments applicable to Phase III construction and O&M activities are described in the **Table 15** below:

Table 15. Required Environmental Commitments for the Proposed Action

Surface Waters and Wetlands
Contractors will be required to make at least two boring attempts before using an alternative stream or river crossing method.
When construction through a wetland basin is unavoidable, existing basin contours will be restored and trenches will be sufficiently compacted to prevent any drainage along the trench or through bottom seepage. A wetland delineation would be required for any identification of jurisdictional water bodies.
Project proponent and contractor will be responsible to comply with Section 404 of the Clean Water Act and avoid permanent impacts to jurisdictional wetlands. NWP 58 authorizes activities “required for the construction, maintenance, repair, and removal of utility lines for water...provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States.” NWP 58 requires pre-construction notification if a Section 10 permit is required, or the discharge will result in greater than 1/10 -acre of waters of the United States.
Temporary or Permanent water intakes will be required to comply with Section 408 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.
If unavoidable permanent impacts to jurisdictional and non-jurisdictional wetlands are identified during site-specific design, Reclamation and Three Affiliated Tribes will develop a compensatory wetland mitigation plan and concurrently implement the plan after review and approval by Corps.

Intermittent streams will be crossed only during low-flow periods and preferably when the streambeds are dry.
Established vegetation including shelterbelts, riparian woodlands, woody draws, will be avoided to the extent possible. For unavoidable removals of trees and shrubs, a 2 to 1 replacement ratio or environmental equivalent will be required. The Three Affiliated Tribes may also develop additional acceptable mitigation.
Native prairie will be avoided to the extent possible. However, if native prairie sod is broken during construction, existing topsoil will be carefully salvaged and replanted with native grasses in a timely manner. Reseeding mixes would be applied on a site-specific basis.

Fish and Wildlife Species and Habitats
To the extent possible, construction will avoid: <ul style="list-style-type: none"> - Wetlands - Federal, State, and Local wildlife areas and refuges
Construction around wildlife habitats will be timed to avoid migratory bird nesting and wildlife parturition dates. <ul style="list-style-type: none"> - Avoid work around wetlands and vegetation removal between April 15 – August 1 Avoid work in Class II or higher waters (fisheries – confirm with ND Game and Fish Department) April 15 – June 1, or directionally bore. (ND Century Code: CHAPTER 33-16-02.1 STANDARDS OF QUALITY FOR WATERS OF THE STATE)
Project power lines will be: <ul style="list-style-type: none"> a) Buried (USFWS 2010a) to minimize electrocution hazards to raptors and minimize impacts to all birds, bats, and particularly benefit whooping cranes. Use Suggested Practices for Avian Protection on Power Lines - The State of the Art in 2006, Avian Power Line Interaction Committee, Edison Electric Institute, Raptor Research Foundation, Washington, D.C., or similar standards will be used. <p>AVIAN PROTECTION PLAN (APP) GUIDELINES (aplic.org) (see pages 30 through 42)</p> <p>or</p> <ul style="list-style-type: none"> b) any new, above ground power lines and an additional equal length of existing power lines in the same vicinity must be marked with visibility enhancement devices to benefit migrating whooping cranes as well as all migratory birds and bats.
FBRW is responsible for compliance with the Migratory Bird Treaty Act. If work would occur during the grassland ground-nesting migratory bird season (May 1 – July 15), any project area containing suitable habitat would be mowed prior to May 1. Preconstruction nesting surveys are recommended if mowing is not possible. If work would occur during the nesting raptor season (Feb 1-July 15), woody vegetation to be removed would be cleared for occupancy prior to construction.
FBRW is responsible for compliance with the Bald and Golden Eagle Protection Act. Construction within 660 feet of visible (330-feet if visual screen exists) nesting bald eagles will be avoided from February 1- July 15. Construction within 0.5 mile of visible (660-feet if visual screen exists) nesting golden eagles will be avoided February 1 – July 15.
To minimize impacts to fisheries resources any stream identified as a fishery that cannot be directionally bored will be avoided during the spawning season (April 15 to June 1) and crossed later in the summer or fall when flows are low or the stream is dry. North Dakota Fishing Waters: https://gf.nd.gov/gnf/conservation/docs/spawning-restriction-exclusions.pdf
Threatened and Endangered Species
If threatened or endangered species are identified and encountered during construction, all construction activities in the immediate area will be stopped until Reclamation can consult with the USFWS to determine appropriate steps to avoid impacting the species.

<u>Designated critical habitat:</u> Lake Sakakawea and all surrounding shorelines are protected under the Endangered Species Act. If the shorelines must be accessed, temporary or permanent damages to habitat resulting from construction would be avoided by using BMPs such as timber or rubber matting or secondary containment for harmful chemicals and a spill response plan.
<u>Piping plover:</u> Monitoring surveys would be completed if work is proposed within 0.5 mile of designated critical habitat between April 15 - August 15. Viewshed from potential projects may preclude monitoring. Any potential project requiring diesel powered equipment would require secondary containment and a spill response plan. Any required 404 or Section 10 permits would be obtained by FBRW or Reclamation.
<u>Northern long-eared bat:</u> Suitable roost tree removal would only occur during the hibernation period (November 15- March 31). A suitable roost tree is defined as any tree with diameter at breast height greater than 3-inches and containing sloughing bark, snags, or crevices.
<u>Pallid sturgeon:</u> Work within Lake Sakakawea would be avoided within the migration and spawning period between April 15 – June 1. Work may require BMPs such as silt curtains to avoid reduction in water quality. Temporary or permanent water intakes would follow established Corps and USFWS intake requirements listed in Appendix C.
<u>Dakota skipper:</u> A Dakota skipper habitat assessment would be completed for any potential project in accordance with the parameters outlined in the Biological Assessment Addendum 2 (BIA 2021). Measures included in the revised field verification approach include: 1) A 480-foot buffer around a potential project area 2) Use of a revised list of requisite plant species 3) Direct impacts to Confirmed DASK Habitat will continue to be avoided 4) A 0.62-mile buffer from known DASK occurrence areas (DASK hotspot) will be applied and 5) A threshold for Confirmed DASK Habitat that is located within any potential project area or within the 480-foot buffer around any potential project area, will be applied. Additional information including USFWS website links and adult survey guidance information may be found in Appendix C.
<u>Whooping crane:</u> If a whooping crane is identified within 1-mile of a project area, all work would cease and the USFWS would be contacted. Migration periods for whooping crane are March 15-May 15 and September 10-November 15.
<u>Rufa red knot:</u> If a rufa red knot is identified within 0.6 miles of the project area, the USFWS would be contacted. Suitable stopover habitat would be avoided.
<u>Monarch butterfly:</u> Suitable habitat would be avoided.

Other Environmental Commitments
All valve boxes will be left above grade in cultivated fields if agreeable to the landowner or moved to the nearest fence or right-of-way. Valves boxes will be located near a paved or graveled road to facilitate easy O&M access. Valve boxes will be painted a neutral color that blends with the background, reduces visibility, and maintains the view-shed.
All established ground water monitoring wells will be avoided, where practicable. However, if any monitoring wells are inadvertently damaged or impacted during project construction, the Water Appropriation Division of the North Dakota Department of Water Resources will be contacted and repaired or replaced.
If established survey benchmarks must be removed or should any monuments be dislodged or damaged during construction, the National Geodetic Survey (Attn: N/CG 162, Rockville, Maryland 20852) will be contacted and reestablished.
No above ground structures will be constructed in the floodplain that could interfere with the above ground movement of floodwaters.
Swampbuster provisions of the Food Security Act (FSA), withholds certain Federal farm program benefits from farmers who convert or modify wetlands. The Conservation Reserve Program (CRP) is a land conservation program administered by the FSA with technical support from the U.S.

Department of Natural Resource Conservation Service (NRCS). Prior to beginning construction in land under CRP contracts, FBRW will consult with:
(a) respective landowners, NRCS to ensure that landowner eligibility in farm subsidy programs (if applicable) will not be jeopardized by project actions and
(b) ensure that Swampbuster requirements will not be violated by construction activities.
FBRW will use FBRWS funds to reimburse landowners for crop damage and hay loss caused by construction.

Construction Practices
Comply with all appropriate Federal, State, Local and Tribal laws.
Follow the BMPs for construction, restoration, and maintenance listed within the construction specifications from a qualified third-party contractor.
Maintain instream flow during stream crossing construction.
Use the shortest practicable alignment to minimize disturbance in crossing streams.
Spoil, debris piling, construction materials, and any other obstructions will be removed from stream crossings to preserve normal water flow.
Erosion control measures will be employed as appropriate and at stream crossings at all times:
(a) Care will be exercised to preserve existing trees along the streambank.
(b) Stabilization, erosion controls, restoration, and re-vegetation of all streambeds and embankments will be performed as soon as a stream crossing is completed and maintained until stable.
(c) Riparian shrubs and trees will be replanted to preserve the shading characteristics of the watercourse and the aesthetic nature of the streambank.
Dump grounds, trash piles, and potential hazardous waste sites will be avoided during construction. FBRW will contract the appropriate agency to address hazardous or illegal sites.
All construction waste materials and excess or unneeded fill associated with construction will be disposed of on uplands, non-wetland areas or permitted landfills.
Standard construction industry dust abatement measures will be taken to minimize fugitive dust emissions during construction activities. Any complaints that may arise will be dealt with in a timely and effective manner.
All Phase III projects, to the extent possible, will be placed just outside and parallel to the road right-of-way or within previously disturbed or developed areas.

Historic Properties and Culturally Sensitive Areas
All cultural resource investigations will be performed according to the procedures specified Reclamation's Directives and Standards for Cultural Resource Management (LND 02-01), and the guidelines put forward by the North Dakota State Historic Preservation Office (SHPO) for cultural resource inventory projects. Cultural resource inventories will be performed under the direction of an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards ((48 FR 22716, Sept. 1983). All appropriate cultural resource activities will be completed prior to the commencement of ground-disturbing activities, including Class I and Class III surveys and consultation with the SHPO and/or the appropriate Tribal Historic Preservation Office (THPO). All cultural resources will be avoided if their significance cannot be established prior to disturbance. If avoidance is not practicable, Reclamation, in consultation with the SHPO and/or THPO, would determine if the site is eligible for nomination to the National Register of Historic Places (NRHP) [36CFR800.4(c) and 36CFR60.4]. If the site is <i>Eligible</i> as a historic property, initially Reclamation, SHPO, THPO, and other interested parties, depending on the type of property, will consult to determine a plan of mitigation. If an <i>Adverse Effect</i> cannot be avoided, the Advisory Council on

Historic Preservation (ACHP) will be contacted. If a site is determined to be <i>Not Eligible</i> for listing on the NRHP, Reclamation will make management recommendations to the appropriate land management agency, THPO, and/or SHPO. All ensuing activities will comply with the NHPA, as amended, and the Archaeological Resource Protection Act (ARPA) [16 U.S.C. 470aa-470mm; Public Law 96-95 (1979)].
The Tribes will be consulted concerning shareable information on the locations of unmarked burials or cemeteries. All such burials or cemeteries will be avoided to the extent possible. If a burial or cemetery cannot be avoided or is encountered during construction, Reclamation will comply with the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et. seq. [Nov. 16, 1990]) if graves are discovered on Federal or trust lands or within Fort Berthold Reservation boundaries. Reclamation will comply with North Dakota Century Code 23-06-27: “Protection of Human Burial Sites, Human Remains, and Burial Goods” for graves on private or State-owned lands.
The Tribes will be consulted regarding any shareable information regarding traditional cultural properties that could be impacted by Phase III implementation. Under the National Park Service National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (TCP), a TCP is an historic property that derives its significance from the role it plays in a community’s historically rooted beliefs, customs, and practices. Reclamation will consult with the appropriate THPO(s) to avoid impacts to TCPs and accommodate access to the sites (Executive Order 13007).
In the event cultural resources or traditional cultural properties are encountered during construction, all ground disturbance activity within the area will be stopped, Reclamation and appropriate authorities will be notified, and all applicable stipulations of the NHPA will be followed. Activities in the area will resume only when compliance has been completed and appropriate measures implemented.

Paleontological Resources
Under the Paleontological Resources Preservation Act (PRPA) of 2009 (16 U.S.C. 470aaa – aaa-11), paleontological resources, which includes any fossilized remains, traces, or imprints of organisms, preserved in or on the earth’s crust, that are of paleontological interest and that provide information about the history of life on earth, are protected. All previously recorded paleontological resources and paleontologically sensitive zones within the path of the Proposed Actions will be inspected by a qualified paleontologist. Avoidance measures will be developed to avoid significant resources.
PRPA does not apply to state, private, or Tribal lands. Therefore, Reclamation, and the appropriate Federal Agency (land manager), would need to be notified if evidence these types of activities on federal lands.

Chapter 6: References

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