DOWL



FINAL ENVIRONMENTAL ASSESSMENT

Crow Pump Diversion Reconstruction

Prepared for:

U.S Department of the Interior
Bureau of Indian Affairs

and

Confederated Salish
and Kootenai Tribes
of the Flathead Reservation

Prepared by:

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May 2025

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STATEMENT OF NO CONFLICT

The Bureau of Indian Affairs is the lead federal agency for this project. The project applicant is the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation. This document was prepared by a consultant (DOWL) under contract with the Confederated Salish and Kootenai Tribes. This document was reviewed and evaluated by Bureau of Indian Affairs staff. As required by the National Environmental Policy Act, this Environmental Assessment reflects independent judgment and analysis of the Bureau of Indian Affairs. A list of organizations and persons consulted in support of the National Environmental Policy Act process, and the personnel involved in the preparation of this document is provided in Sections 6 and 7 of this document.

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ACRONYMS AND ABBREVIATIONS

ALCO	Aquatic Lands Conservation Ordinance
APE	Area of Potential Effect
BIA	Bureau of Indian Affairs
BMP	Best Management Practices
BPA	Bonneville Power Association
CFR	Code of Federal Regulations
cfs	cubic feet per second
CSKT	Confederated Salish and Kootenai Tribes
CO_2	Carbon Dioxide
CWA	Clean Water Act
DOI	Department of Interior
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIIP	Flathead Indian Irrigation Project
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GEUM	Geum Environmental Consulting
HDPE	High-Density Polyethylene
ITA	Indian Trust Asset
IWMP	Integrated Water Management Plan
MBTA	Migratory Bird Treaty Act
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MEF	Minimum Enforceable Flows
Mg/L	Milligrams per Liter
MPN/L	Most Probable Number per Liter
MRL	Montana Rail Link
MSL	Mean Sea Level
MT-212	Montana State Highway 212
MTNHP	Montana Natural Heritage Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NTP	Notice to Proceed
ROW	Right-of-Way
TPD	Tribal (Historic) Preservation Department
SWPPP	Storm Water Pollution Prevention Plan
US-93	United States Highway 93
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USGS	United States Geological Survey

1.0 INTRODUCTION

1.1 BACKGROUND

The Confederated Salish and Kootenai Tribes (CSKT) of the Flathead Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), is proposing to replace the Crow Pump Diversion, implement other irrigation improvements at the Crow Pump Canal, and address degraded habitat in the area through restoration and enhancement strategies.

The Crow Pump Diversion is part of the Flathead Indian Irrigation Project (FIIP), which is owned and operated by the BIA. FIIP was authorized in 1904 as part of the Flathead Allotment Act and began operation in 1910. The Crow Pump Diversion is within the Charlo Irrigation Service Area, which is identified as a top priority area for the FIIP. The Charlo Area is serviced by a number of feeder diversions from the Post Creek and Crow Creek drainages. These diversions help fill the Kicking Horse Reservoir, where water can then be transferred to Ninepipe Reservoir via the Ninepipe Feeder Canal.

The Crow Pump Diversion was originally constructed to allow the FIIP to supplement water in the Charlo Irrigation Service Area with water from Crow Creek. The diversion is used to divert water from Crow Creek into a pumping plant that lifts it to the Crow Pump Canal. Water in the Crow Pump Canal can either be delivered for supplemental storage in Ninepipe Reservoir or used to supplement flows in the Post A Canal. The Crow Pump Diversion is the lowest elevation diversion structure in the Charlo Irrigation Service Area and provides the last opportunity to divert water to the area before it passes downstream to Lower Crow Reservoir. It is also located below the confluence with North Crow Creek and Ronan Spring Creek and can be used to tap into additional water sources (e.g., South Crow tributaries).

In September 2026, minimum instream flows within Post Creek will become enforceable and will set a firm threshold for the amount of water that the Charlo Irrigation Service Area can rely on from Post Creek. In addition, an outlet works construction project on Kicking Horse Dam is set to begin in the near future, which would temporarily reduce the amount of water that can be transferred from Kicking Horse Reservoir to Ninepipe Reservoir. The Crow Pump Diversion can offset the Charlo Irrigation Service Area's reliance on Post Creek and provide the ability to send water to Ninepipe Reservoir before and during the Kicking Horse Dam outlet works construction project, providing a much-needed storage buffer and additional flexibility while Kicking Horse Reservoir is out of commission.

The Crow Pump Diversion system, however, is currently inoperable. Rather than rehabilitating the Crow Pump Diversion and related irrigation infrastructure, the CSKT desire to improve the diversion and irrigation infrastructure through reconstruction in a manner that accommodates fish passage, habitat restoration, and improved pump efficiency and operation. In 2023, the CSKT hired DOWL to develop an Integrated Water Management Plan (IWMP) for the Charlo Irrigation Service Area, which included development of the Crow Pump Diversion (the project) and substantial improvements to the Crow Pump Canal (DOWL, 2023). The proposed improvements described in this Environmental Assessment (EA) under the Proposed Action Alternative would implement design objectives identified in the IWMP.

Funding for water resource development and rehabilitation of FIIP was authorized by the U.S. Congress in December 2020 through the Montana Water Rights Protection Act (S.3019 - 116th Congress [2019-2020]). The Act, which was formally executed by the U.S. Department of Interior (DOI) on September 17, 2021, enabled the CSKT-MT Water Rights Compact (or Compact) and appropriated funding to the tribe, through Division DD of the Consolidated Appropriations Act of 2021 (Pub. L. 116-260). The Compact established funding and mechanisms for rehabilitation and betterment of the FIIP and to address damages to aquatic and terrestrial habitat. This funding would be used for the project.

1.2 STATUTORY AND REGULATORY AUTHORITY

The BIA owns, operates, and maintains the diversion structure, headworks, pumphouse, and canal and is the lead federal agency for the project. The surrounding land within the project action area is held in a trust by the BIA for the CSKT. Project funding is through the Montana Water Rights Protection Act to implement the CSKT-MT Compact. Multiple federal regulatory actions and authorizations would be required for the project.

The disbursement of federal funds and regulatory permitting constitute federal actions under implementing regulations for compliance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended.

This document is an EA generated under the implementing procedures adopted by the BIA in accordance with the guidelines contained in the U.S. DOI, BIA NEPA Guidebook 59 IAM 3-H (BIA, 2012). This guidebook provides agency guidelines for complying with NEPA. The purpose of this EA is to evaluate the likely environmental consequences resulting from the proposed irrigation and habitat improvements in the Crow Pump Diversion area. An EA is conducted to decide whether to prepare a Finding of No Significant Impact (FONSI) or to undertake the preparation of an Environmental Impact Statement.

1.3 PUBLIC AND AGENCY INVOLVEMENT AND ISSUE DEVELOPMENT

Relevant issues were solicited from the CSKT Natural Resources Department, Tribal Historic Preservation Department (TPD), and CSKT Tribal Shoreline Protection Office during an Agency Scoping meeting held on August 15, 2024. BIA Flathead Agency staff, U.S. Army Corps of Engineers (USACE), and U.S. Fish and Wildlife Service (USFWS) were also provided an opportunity to review the project and provide comments. Information on the meeting is found in Appendix A.

The BIA and CSKT have determined that the level of public interest for this project is low, and public scoping on the project is not required. The BIA will notify the public of the availability of the Final EA and FONSI once they have been completed, during the notice of appeal period.

2.0 PURPOSE AND NEED

2.1 LOCATION AND GENERAL DESCRIPTION OF THE AFFECTED AREA

The proposed project is located on the Flathead Indian Reservation, just west of Piedalue Road, south of Bouchard Road, and north of Duck Road and Montana State Highway 212 (MT-212). The diversion is approximately four miles north of the community of Charlo, Lake County, Montana (Figure 1). The Crow Pump Diversion, Crow Creek, and the Crow Pump Canal are found in Sections 15, 16, and 21 of Township 20 North, Range 20 West on the Charlo, Montana, U.S. Geological Survey (USGS) 7.5-minute topographic series map. Topography within the project action area is primarily flat, with elevations of approximately 3,000 feet above mean sea level (MSL) near the Crow Pump Diversion. The land within and adjacent to the project action area is under management by CSKT Tribal Lands Department, CSKT Wildlife Program Mitigation Lands, and Federal Land. Rights-of-way exist for the railroad (Montana Rail link [MRL]). Crow Creek and the associated riparian corridor are found within and directly adjacent to the project action area near the diversion structure, with grassland, wetlands, and prior or existing croplands extending beyond the creek and riparian corridor in all directions (Figure 1).

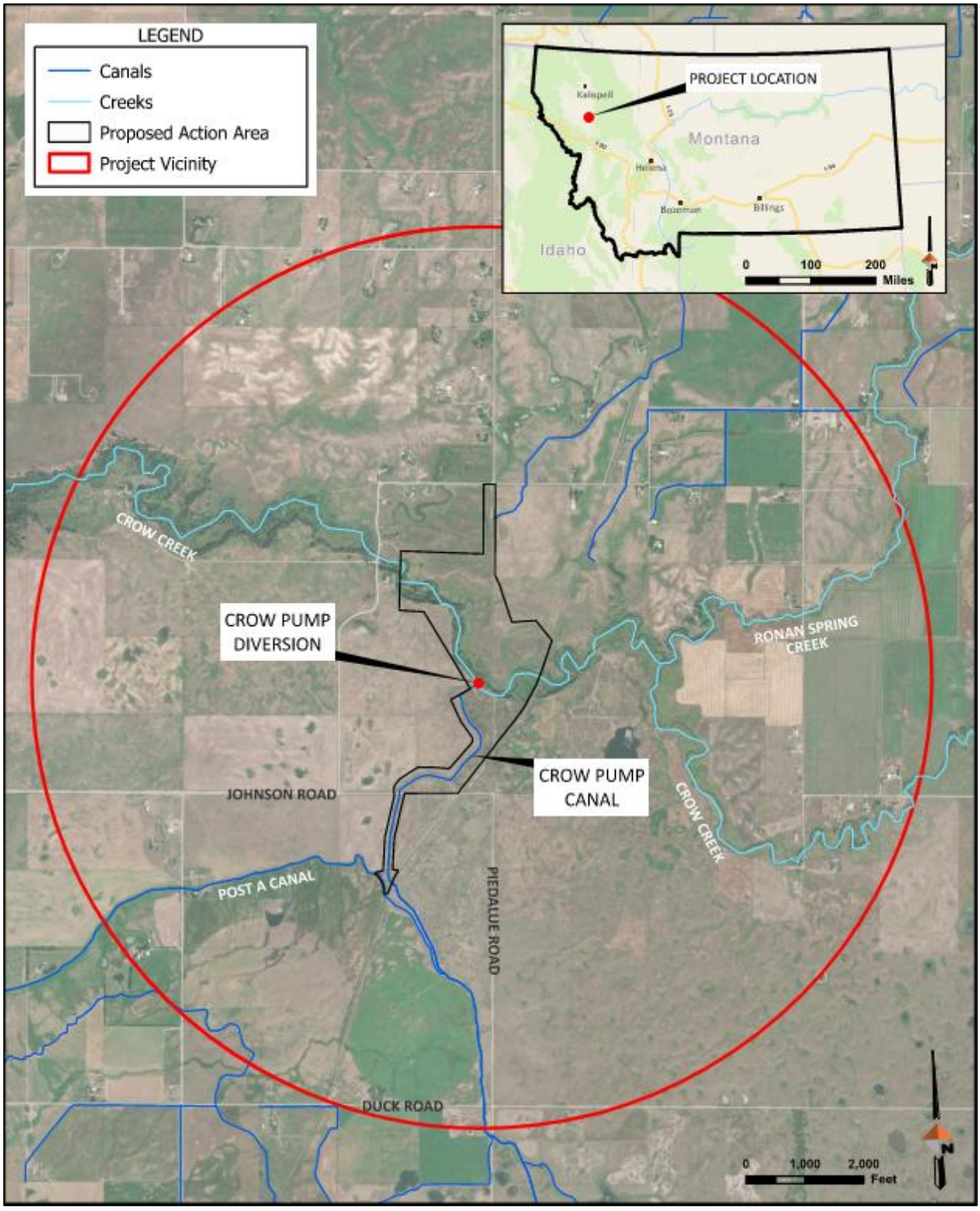


Figure 1. Project Location and Vicinity

2.2 PURPOSE AND NEED OF PROJECT

2.2.1 Purpose

The project addresses dual objectives of the CSKT-MT Compact, providing both irrigation improvements and restoration. The primary purposes of the project are to reconstruct the Crow Pump Diversion and related irrigation infrastructure to improve operational flexibility, add redundancy, increase the facility's capacity to divert and pump water, improve passage for a wide variety of fish species and life stages in Crow Creek, and to accommodate aquatic and terrestrial habitat restoration and enhancements in the diversion area.

2.2.2 Need

The current Crow Pump Diversion structure is not operational; however, when the diversion structure was functioning, the FIIP used it to divert water from Crow Creek into a pumping plant that lifts it into the Crow Pump Canal. Water in the Crow Pump Canal could either be delivered for storage in the Ninepipe Reservoir or used to supplement flows in the Post A Canal. The existing Crow Pump Diversion configuration consists of a 50-foot-long by 5-foot-high concrete wall that spans Crow Creek, with a spillway weir, radial gate, and adjacent inlet bay and pump wet well. The pump is a Fairbanks-Morse pump with a 24-inch steel outlet pipe that discharges water into the Crow Pump Canal. The open, unlined canal is approximately 4,250 feet long from the pump house downstream to the siphon crossing at the MRL railroad, with a base width of 4.52 feet. The configuration of the system results in operational limitations, sediment and debris concerns, excessive canal seepage, and no accommodation for fish passage. Additionally, previous land management practices (e.g., farming and grazing) have resulted in substantial changes to habitat communities within the area, degradation of the floodplain, and are contributing to bank erosion along the creek.

Each of these concerns are described in greater detail in the sections below.

Operational Limitations

The Crow Pump Diversion and pump station have capacity, flexibility, and redundancy limitations. The current facility is not operable, and the entire irrigation system lacks backup features to keep it running without the Crow Pump Diversion. When the Crow Pump Diversion was operable, the pump capacity was a reported 24 cubic foot per second (cfs); however, the system typically only operated between 8 and 17 cfs (DOWL, 2023). The existing Crow Pump Diversion cannot effectively accommodate the diversion of variable flow rates without the use of manual flow adjustments downstream in Post A Canal.

Sediment and Debris

The configuration and location of the existing Crow Pump Diversion result in sediment deposition downstream of the diversion structure and in the Crow Pump Canal. There are currently 12-inches of silty sediment in the existing pump intake (i.e. the wet well). The accumulation of debris in the wet well requires active management and maintenance activities.

Fish Passage and Screening

There is currently no accommodation for upstream fish passage at the Crow Pump Diversion, and the current configuration does not allow fish species at varying life stages to pass through the diversion safely. The existing pump intake is not screened to exclude fish from entering, leaving fish entrained in the wet well and vulnerable to harm or death when the pumps are operational.

Excessive Seepage

The Crow Pump Diversion pumps water into the Crow Pump Canal, an open unlined irrigation ditch. CSKT has reported that the Crow Pump Canal is highly inefficient due to seepage into the ground from the canal, and irrigation water often infiltrates prior to reaching the Post A – Pump Canal intersection.

Habitat Impairments

Construction of the Crow Pump Diversion and adjacent land use practices have substantially changed the topography and habitat communities along the Crow Creek corridor. Grazing and changes in the habitat communities around the diversion are contributing to bank instability and provide an environment where noxious and invasive species can thrive. These changes result in impaired aquatic and terrestrial habitat communities within the project action area.

2.2.3 Design Goals and Objectives

Goals and objectives provide a basis for comparing the effectiveness of alternatives to achieve the desired outcomes of the action. All alternatives carried forward for detailed analysis must meet the objectives to a large degree, and well as meet the project purpose and need. The FIIP and CSKT identified the following goals and objectives for the project:

- Decrease the Charlo Irrigation Service Area's reliance on Post Creek water and diversify water sources available to the Charlo Area
- Provide upstream fish passage for a number of fish species and life stages within Crow Creek and prevent fish from entering the intake structure
- Decrease the loss of diverted water from the Crow Pump Canal
- Enhance and restore riparian vegetation, habitat, and wetlands near the diversion area
- Increase the facility's pumped diversion capacity and provide operational flexibility and pump facility redundancy
- Accommodate the ability to divert and pump water during the irrigation off-season months, including winter
- Meet upcoming Water Rights Settlement instream flows for Post and Crow Creeks and provide an adaptive irrigation facility to ensure instream flow compliance

3.0 ANALYSIS OF ALTERNATIVES

NEPA directs federal agencies to explore and objectively evaluate all reasonable alternatives to a proposed action and to briefly discuss the rationale for eliminating alternatives that were not considered in detail.

To meet the purpose and need of the project, improvements are needed to address operational limitations, sediment and debris concerns, and fisheries concerns at the Crow Pump Diversion and canal and to address habitat impairments adjacent to the diversion along Crow Creek.

Preliminary alternatives analysis resulted in the development of a wide range of potential actions, culminating in the identification of the Proposed Action Alternative. Improvement alternatives were screened based on their ability to meet the purpose and need of the project versus impacts to the human environment and costs. This section provides a discussion of alternatives carried forward for detailed study (i.e., No Action and Proposed Action Alternatives) and those considered through the alternatives investigations but excluded from further analysis in this document.

3.1 ALTERNATIVES CARRIED FORWARD FOR DETAILED STUDY

3.1.1 No Action Alternative

Under the No Action Alternative, proposed improvements would not occur, the program funding provided by Congress for the FIIP rehabilitation would not be spent in the Crow Pump Diversion area, wetland mitigation and fish passage enhancements would not be constructed, and Clean Water Act (CWA) Section 404/401 permitting and certification would not be authorized by USACE or the CSKT. Routine operation and maintenance of the existing system may occur, but the current failed condition of the facility would not be addressed.

Under the No Action Alternative, operational and capacity limitations, sediment and debris accumulations, fisheries restrictions, and habitat impairments in and adjacent to the Crow Pump Diversion area would persist. Additionally, the No Action Alternative would not meet the CSKT's objective of decreasing the Charlo Irrigation Service Area's reliance on Post Creek water and diversifying water sources available to the Charlo Area.

3.1.2 Proposed Action Alternative (Preferred Alternative)

The Proposed Action Alternative includes removing and reconstructing the Crow Pump Diversion, constructing a new pump building, replacing a portion of the Crow Pump Canal with a pipeline, and restoring and enhancing the Crow Creek corridor.

The Proposed Action Alternative would meet the following objectives:

- Provide upstream fish passage and prevent fish from entering the pump intake (i.e., safe downstream fish passage)
- Provide pump redundancy by using multiple pumps and improve the pumps' operational flexibility (i.e., the ability to pump at different flow rates)
- Increase the facility's pumped diversion capacity
- Provide pump controls and provisions to simplify the future incorporation of Supervisory Control and Data Acquisition for remote facility monitoring and/or control
- Accommodate the ability to divert and pump water during the irrigation off-season months, from September 15 to April 15, while maintaining Tribal in-stream flow rights
- Provide pump discharge canal improvements, including installing a gravity pipeline to replace the canal upstream of the Post A Canal
- Identify wetland and stream habitat enhancement opportunities within the action area to address regulatory agencies' compensatory mitigation requirements and to address broader CSKT goals for natural resource restoration/enhancement throughout the Flathead Indian Reservation

Figure 2 presents an overview of the Proposed Action Alternative. The following subsections describe the Proposed Action Alternative components in more detail and present maps specific to the various elements of this alternative.

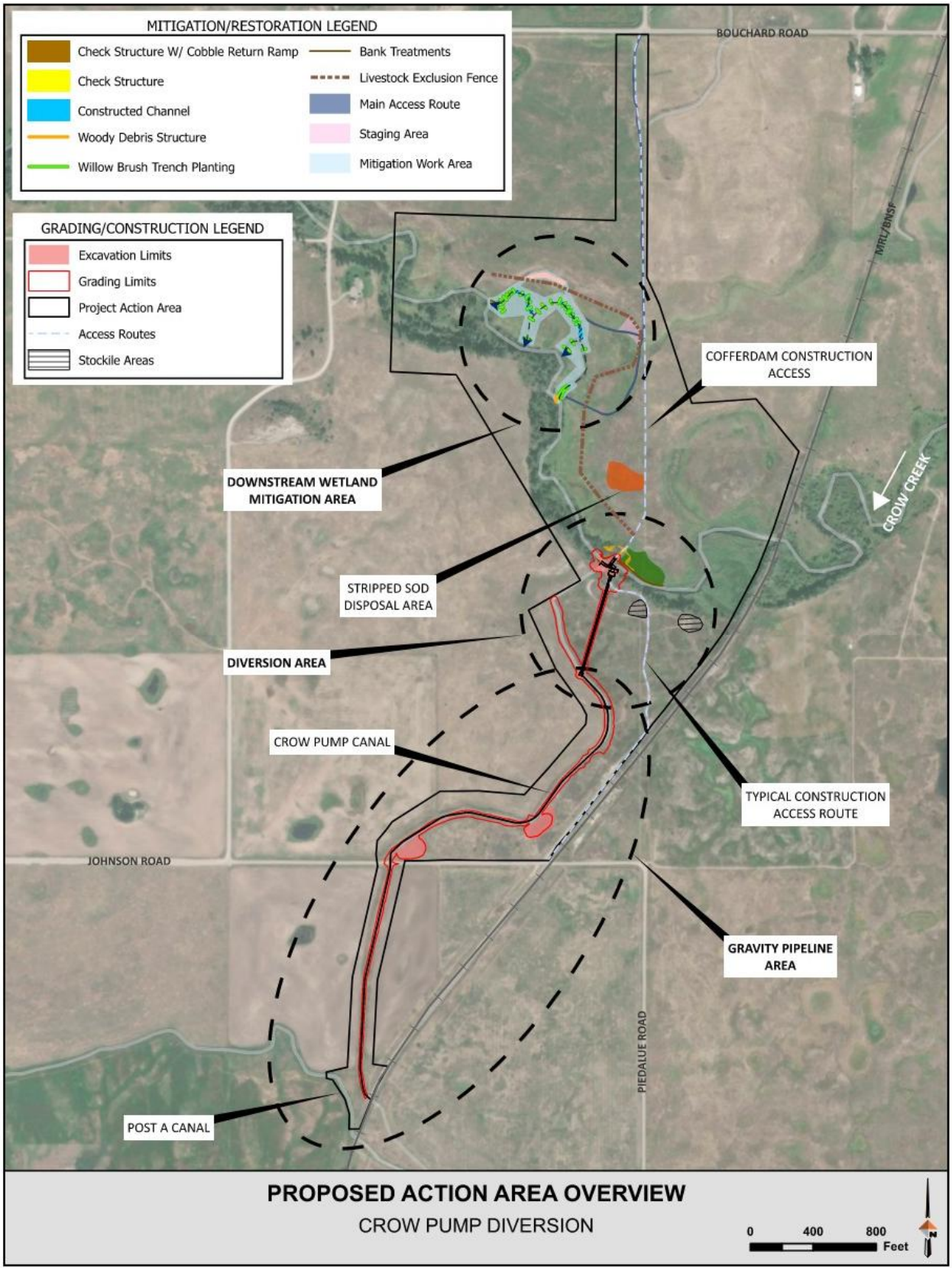


Figure 2. Proposed Action Area Overview

Crow Pump Diversion Reconstruction

Figure 3 presents a map showing the diversion area components under the Proposed Action Alternative, including actions related to the diversion dam reconstruction, a potential temporary bypass channel footprint, diversion area restoration and mitigation components (i.e., bank treatments and floodplain treatment area), stockpile areas, excavation limits, grading limits, and access routes.

The existing Crow Pump Diversion would be removed and replaced with a new concrete structure that includes a 35-foot-long spillway, a 6-foot by 3.5-foot sluiceway slide gate, a grouted riprap fishway, and an intake protected with a fish screen. The new spillway crest of the diversion would be about 1.5 feet lower than the existing spillway to reduce backwater effects, and the new diversion would be arranged to provide improved streamlines in the creek upstream of the diversion and to facilitate debris and sediment passage. The sluiceway and associated sluiceway slide gate would be used to pass sediment through the forebay during runoff events. Riprap and brush bank treatments would be installed along the banks both upstream and downstream of the new diversion.

The approximately 70-foot-long grouted riprap fishway includes five weirs with pools in between each weir. A pre-formed scour hole would be incorporated into the design downstream of the fishway to mitigate scour potential by providing volume to encourage energy dissipation. The new fishway would be designed to allow upstream passage of largescale sucker (*Catostomus macrocheilus*), longnose sucker (*Catostomus catostomus*), Westslope cutthroat trout (*Oncorhynchus lewisi*), rainbow trout (*O. mykiss*), mountain whitefish (*Prosopium williamsoni*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) for periods associated with both spawning and thermal refugia (refer to Figure 4).

The new intake would include three inclined flat panel fish screens with 1.75-millimeter (maximum) screen openings to prevent fish and debris from entering the pump station wet well. An airburst cleaning system would be installed to deliver bursts of compressed air to remove debris from the surface of the screens. Approach flow and sweeping velocities, as well as pump flows, have also been designed to effectively move fish past the screen and pump intake.

The replacement pump station would consist of four vertical pumps for operational flexibility and redundancy and an increase in pumping capacity up to 40 cfs. The pumps would be located inside a new 26- by 40-foot pump station building and positioned over a wet well. The new concrete pump station would include two rooms. The larger room would house the pumps and airburst cleaning system. The smaller room would include the electrical and control equipment. The pumps would be designed with variable frequency drives allowing pumping over a range of flows from approximately 2 cfs up to 40 cfs with all pumps operating.

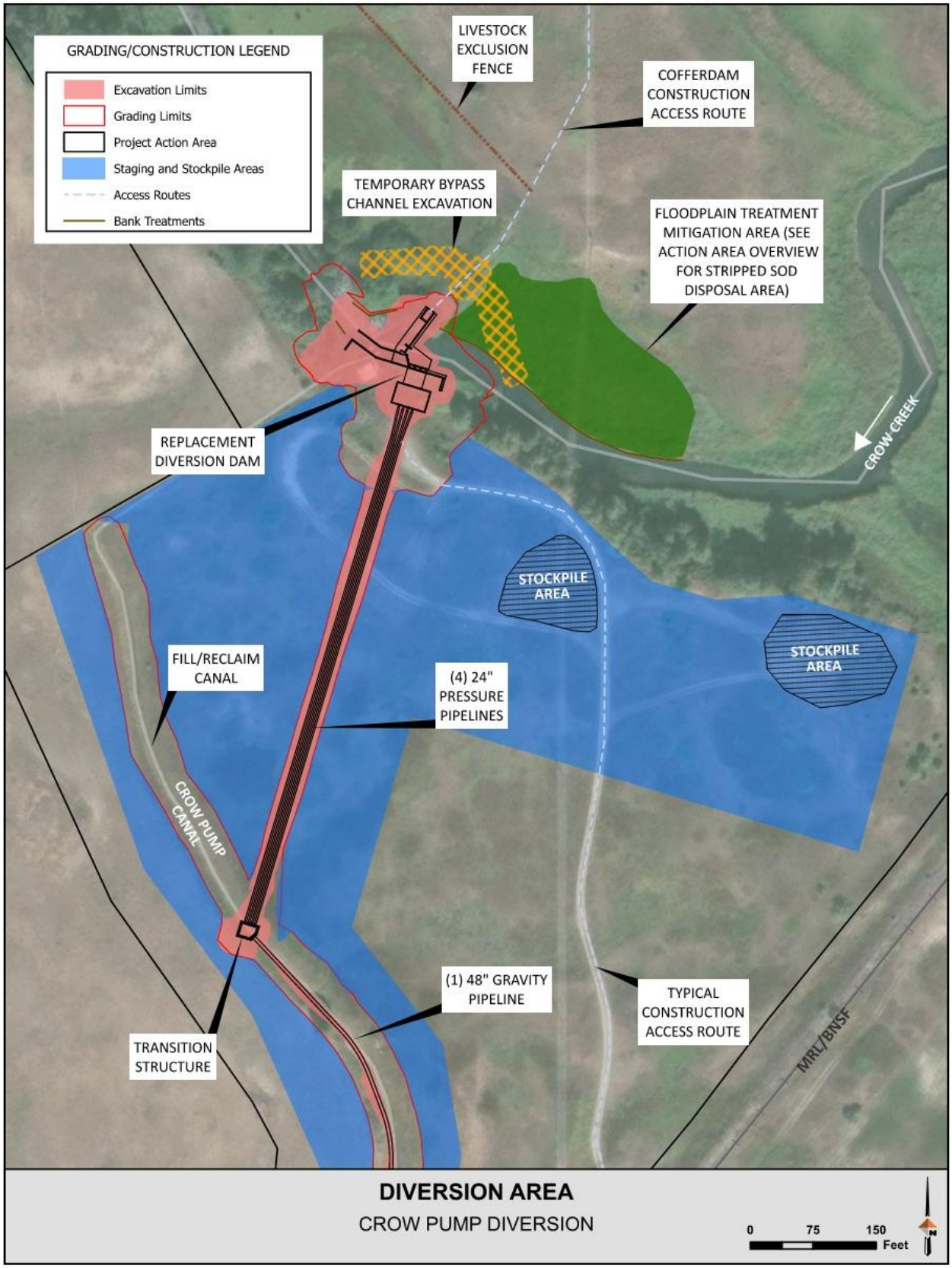


Figure 3. Diversion Area Components

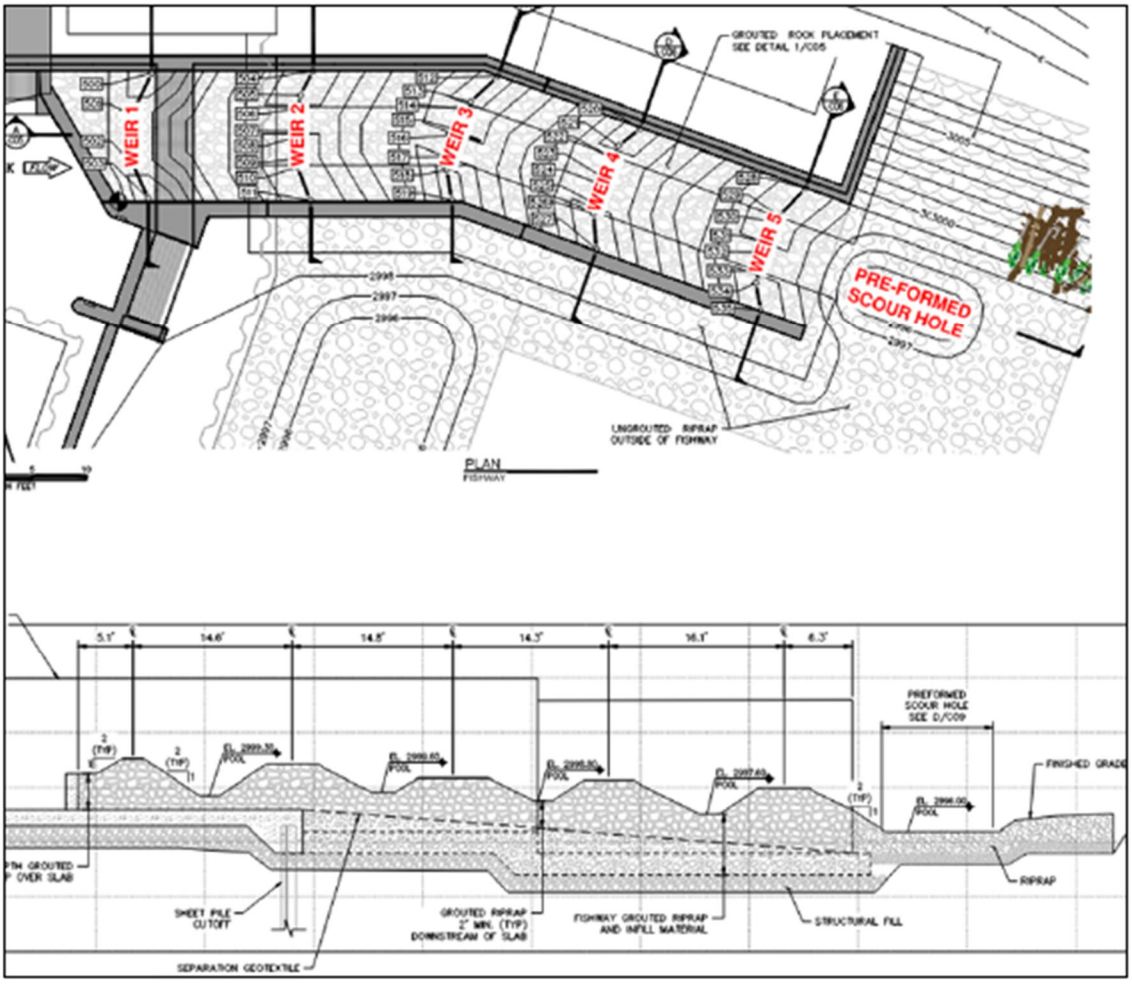


Figure 4. Fishway Plan and Profile

The following provides a description of the various construction elements related to the Proposed Action Alternative.

Temporary Creek Bypass and Cofferdams

A temporary bypass channel and cofferdams would be necessary to construct the new diversion, intake, and wet well. The cross-hatched orange area shown in Figure 3 provides a bypass channel excavation footprint that could be used to convey streamflow around the diversion area. Cofferdams would need to be constructed in the creek downstream of the bypass channel inlet and upstream of the bypass channel outlet. The Construction Contractor would be responsible for designing the bypass and cofferdams; however, it is assumed that either earthen-filled bags or water-inflated bladders would be used as cofferdams. It is anticipated that cofferdam placement and bypass channel construction would begin in July. A fish rescue would be conducted in the existing creek channel when flows are routed through the bypass and conducted again in the bypass channel after flows are restored in the permanent creek channel. The cofferdams and bypass channel would remain in place until the new diversion dam, intake, and wet well are constructed and below-water appurtenances (e.g., gates, screens) are installed.

Figure 5 shows a possible bypass channel and cofferdam layout in more detail. For this configuration, material excavated from the temporary bypass channel would be stockpiled on the floodplain north of

the creek (indicated in brown in Figure 5). This stockpile area coincides with the floodplain treatment mitigation area (shown in green in Figure 3), and it is anticipated that storing the excavated material would help eradicate reed canarygrass (*Phalaris arundinacea*) from the area, a key goal of the diversion area mitigation plan that is part of the Proposed Action Alternative.

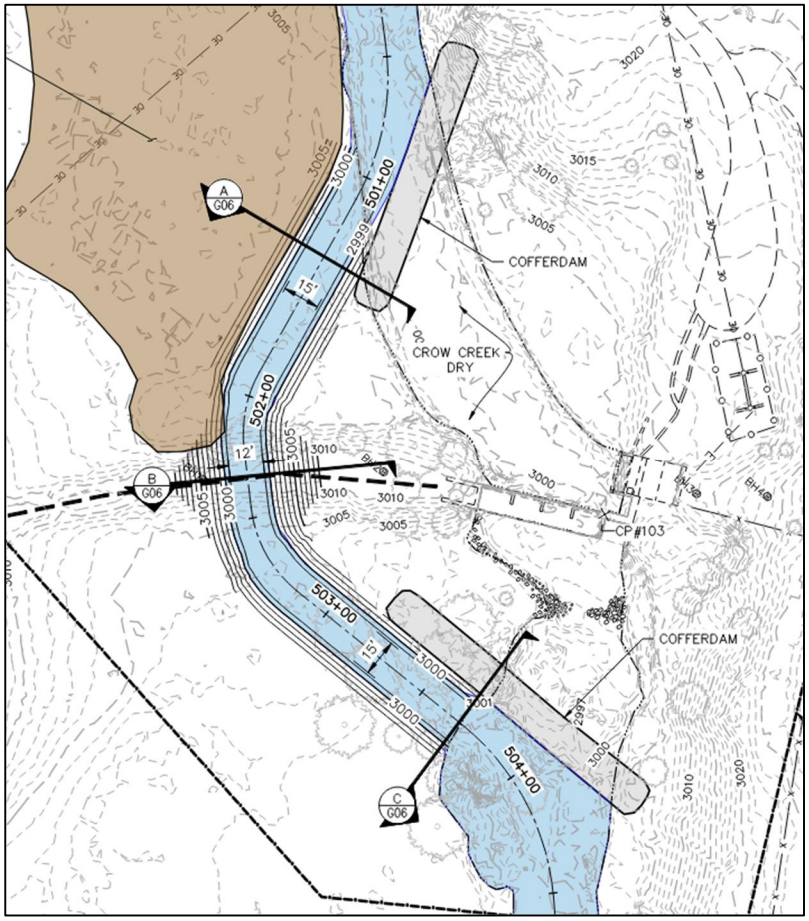


Figure 5. Conceptual Bypass Channel and Cofferdam Layout

Demolition and In-Channel Excavation

Once the cofferdam is in place and the diversion area is dewatered sufficiently, the existing diversion structure would be demolished, removed, and disposed of according to the required specifications. An area in the dewatered stream would be excavated to place structural fill, concrete slabs, riprap bedding, and riprap. Figure 3 shows the proposed excavation boundary for the entire diversion area, and Figure 6 shows the proposed excavation boundary and elevations applicable to the in-channel excavation. Excavation and demolition activities would commence after the bypass channel and cofferdams are constructed.

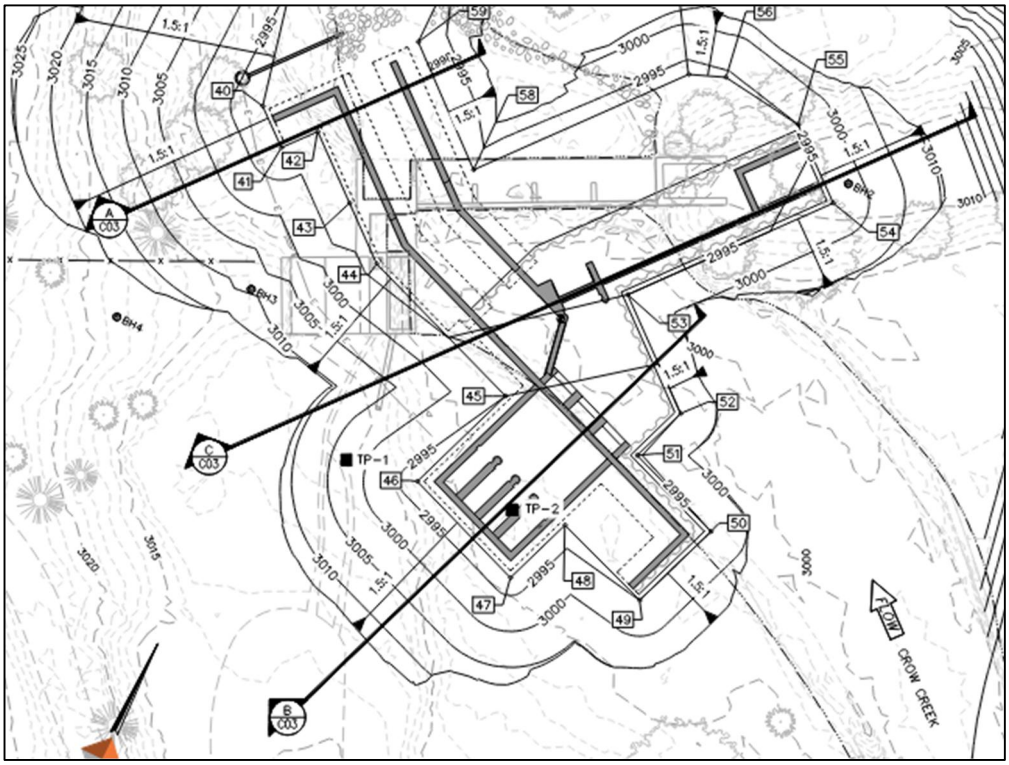


Figure 6. In-Channel Excavation Plan

Sheet Pile Driving

PZ22 sheet pile would be driven near the upstream and downstream edges of the diversion slab, as shown in Figure 6. The sheet pile would be driven to a depth of 11.5 feet (i.e., elevation 2986.00 feet) or to refusal. The sheet pile driving could occur concurrently with excavation activities once the excavation is brought to a level sufficient for placing structural fill material below the proposed concrete slabs.

Diversion Dam, Intake, and Pump Station Wet Well

Once excavation is complete, and the sheet piles driven, the following activities related to the new diversion, intake, and pump station wet well would begin:

- Place structural fill in areas where new concrete slabs would be formed
- Form and place concrete slabs
- Form and place concrete walls
- Place/install fishway infill and grouted riprap within the fishway walls
- Place riprap bedding and riprap erosion protection. Riprap erosion protection would be limited to the banks and streambeds up to about 20 feet upstream and downstream of the structure
- Install below-water and difficult-to-access diversion appurtenances (e.g., slide gate, fish screen, handrails)
- Backfill the diversion and wet well structures

After construction is complete, the cofferdams would be removed, and the temporary bypass channel would be decommissioned.

Pump Building

Construction for the new pump building would involve placing structural fill below the proposed bottom of building slab elevations, forming and placing concrete slabs, walls, and a concrete walkway/stairs, placing pre-fabricated partial-height building walls, placing and installing vertical turbine pumps and appurtenances, constructing the pump building roof, and backfilling the structure to the grading limits shown in Figure 3.

Stream gage

A new stream gage would be installed about 150 feet downstream of the new diversion dam, as shown in Figure 7. CSKT would field-direct the exact stream gage location to achieve favorable hydraulic conditions for accurate and reliable measurements. The stream gage would involve installation of a 48-inch diameter manhole, backfilling the manhole, and installing a two-inch diameter ductile iron pipe spanning from the manhole to the creek.



Figure 7. Stream Gage Location

Crow Pump Canal Pipeline

Figure 3 and Figure 8 show activities related to the new Crow Pump Canal pipeline. Water pumped from Crow Creek would be conveyed by four new 638.8-foot-long by 24-inch diameter high-density polyethylene (HDPE) pipes to a transition structure. Water would then exit the transition structure into a 3,695-foot-long by 48-inch diameter HDPE gravity pipe that would primarily follow the canal to the MRL railroad siphon inlet.

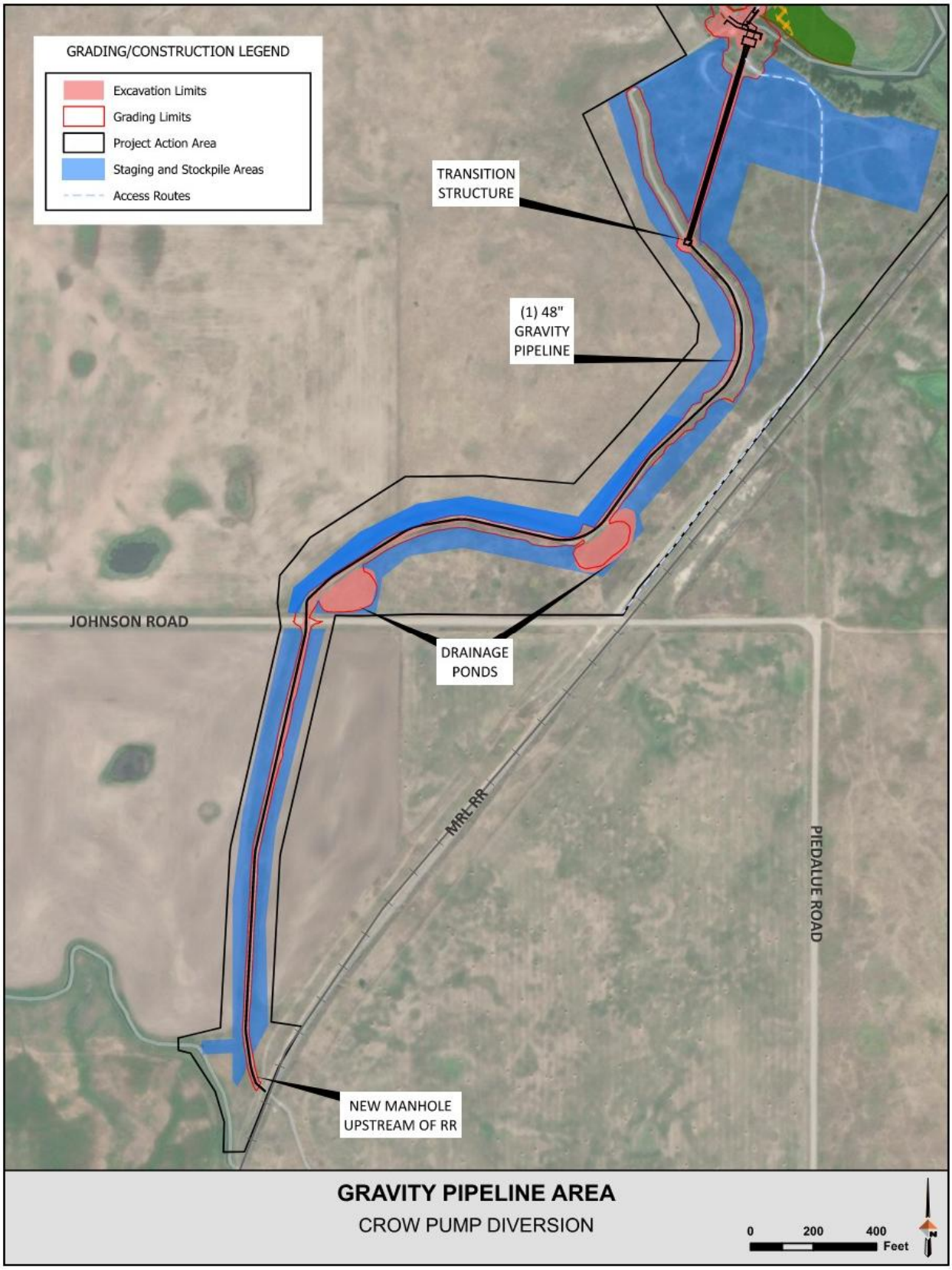


Figure 8. Gravity Pipeline Area Components

Pressure Pipeline

The existing pressure pipeline (spanning from the existing pump building to the head of the existing canal) would be excavated and removed. As shown in Figure 3 and Figure 8, the new pressure pipelines would enter the Crow Pump Canal prism downstream of the existing canal start, and the canal footprint upstream of the new transition structure location would be filled to restore a pre-canal condition. Pressure pipeline installation would involve excavation to elevations necessary to install the pipeline, placing pipeline bedding, placing and fusing HDPE pipe, and backfilling the pipes.

Transition Structure

A transition structure would be constructed at the intersection of the pressure pipelines and gravity pipeline in the location shown in Figure 8. Figure 9 shows the transition structure and the required excavation in more detail. To install the transition structure, the area would be excavated, structural fill would be placed, concrete slabs and walls would be formed, pipes to the structure would be fitted, and appurtenances such as grating would be installed.

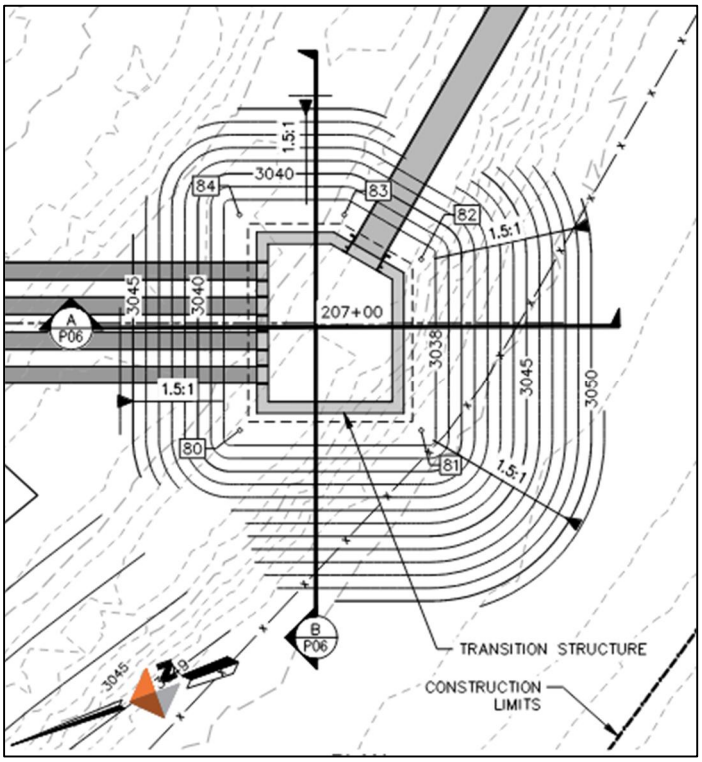


Figure 9. Transition Structure and Required Excavation

Gravity Pipeline and Drainage Ponds

The 48-inch HDPE gravity pipeline would span 3,695 feet from the transition structure to the MRL railroad siphon inlet, as shown in Figure 8. The alignment of the new gravity pipeline would follow the alignment of the existing Crow Pump Canal. These improvements would involve demolishing a check and wasteway structure upstream of the MRL railroad crossing siphon and removing the Johnson Road crossing culvert.

The gravity pipeline installation would involve excavation, placing pipe bedding, placing and fusing HDPE pipe, and backfilling the pipes. The three typical cross sections in Figure 10 nominally show the excavation

and fill that would be performed in different canal reaches. A 20 to 50-feet-wide corridor along the gravity pipeline/canal alignment would be used for staging and fusing the pipeline.

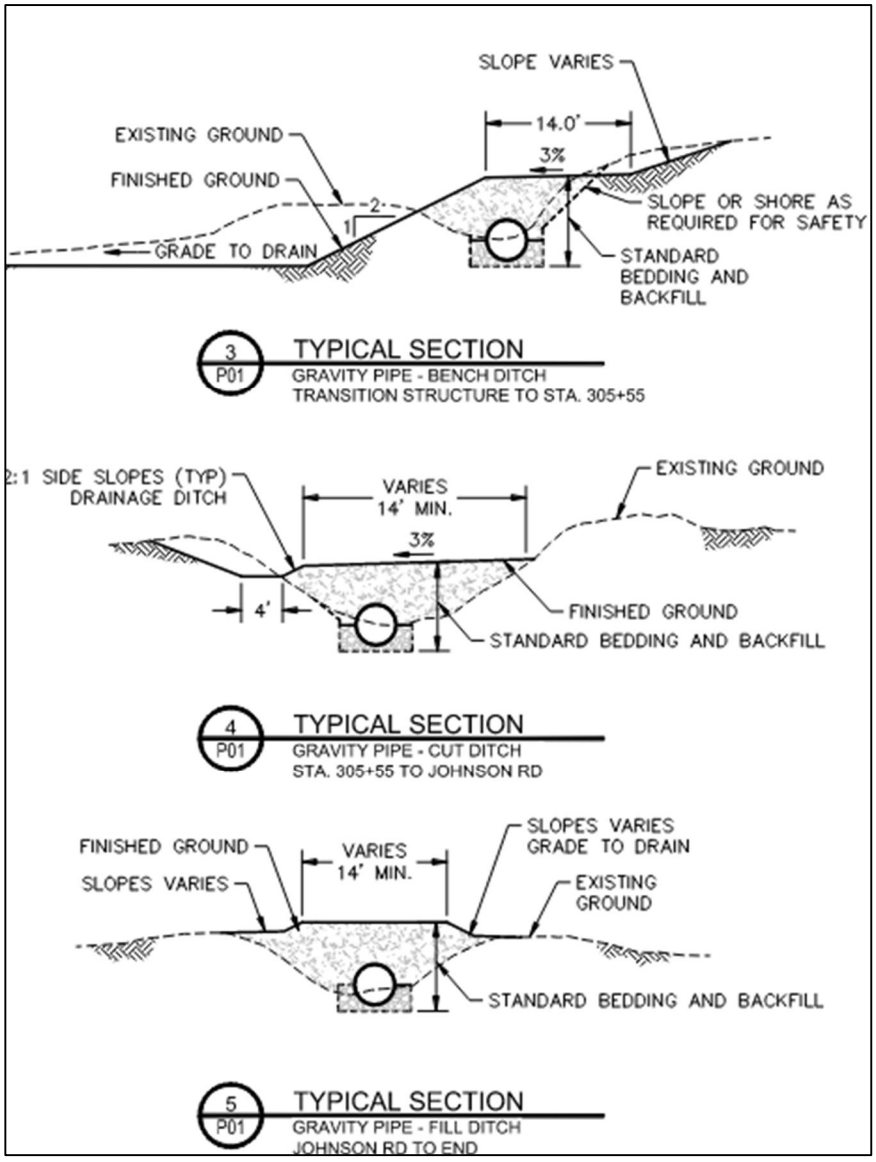


Figure 10. Gravity Pipeline Typical Cross Sections

Restoration and Mitigation

The Proposed Action Alternative would include habitat and wetland restoration at two on-site locations:

- Diversion Area: the floodplain north of the creek, shown as the "floodplain treatment mitigation area" in Figure 3 and Figure 11
- Downstream Area: the series of oxbow features approximately 1,200 feet downstream of the diversion along the northeast side of the creek, shown in Figure 12

Brush bank treatments would also be incorporated upstream and downstream of the new diversion and along the entire floodplain treatment area bank. The restoration and mitigation elements described in this section would be intended to restore degraded habitat in the area and to mitigate the permanent wetland impacts associated with the Proposed Action Alternative, as required by the USACE under CWA Section 404 and CSKT Shoreline Protection under the Aquatic Lands Conservation Ordinance (ALCO).

Diversion Area Restoration and Mitigation

Figure 11 shows an excerpt of the diversion area mitigation plan. A 0.8-acre area on this floodplain surface (shown in brown in Figure 5) would be disturbed during construction due to stockpiling of excavated material for the temporary bypass channel. This provides an opportunity to restore the area post-construction to a native riparian/wetland plant community with improved habitat. The existing condition is a monoculture of reed canarygrass. This reed canarygrass plant community would be restored to a native riparian/wetland plant community, including willow species such as Bebb's willow (*Salix bebbiana*), Drummond willow (*Salix drummondiana*), Geyer willow (*Salix geyeriana*), yellow willow (*Salix lutea)*, and sandbar willow (*Salix exigua*). Understory species would include native wetland herbaceous plants such as hardstem bulrush (*Schoenoplectus acutus*), beaked sedge (*Carex utriculate*), water sedge (*Carex aquatilis*), and other native species appropriate to the site.

As part of preparing the area for use as a bypass channel and stockpile area, about 2,500 CY of reed canarygrass sod would be stripped and placed in the upland area indicated above in Figure 2. Once the temporary bypass channel is no longer needed, the earth within the "floodplain treatment area" would be moved to construct a bankline bench and depressions, as shown in Figure 11.

Microtopography (floodplain roughness) would be incorporated by creating furrows and ridges that are within a half-foot of the desired final grading elevation. Willow cuttings and brush would be buried deeply in trenches and then backfilled (willow brush trenches) throughout the area to establish shrubs and protect them from browse by wildlife. A native seed mix would be applied throughout the area. The streambank along this area would be constructed using layers of native willow cuttings and dead brush, then backfilled with native floodplain soils (brush bank). Brush banks would also be constructed on both sides of the Crow Creek channel below the diversion, tying in with structures on the upstream end and existing natural streambank on the downstream end.

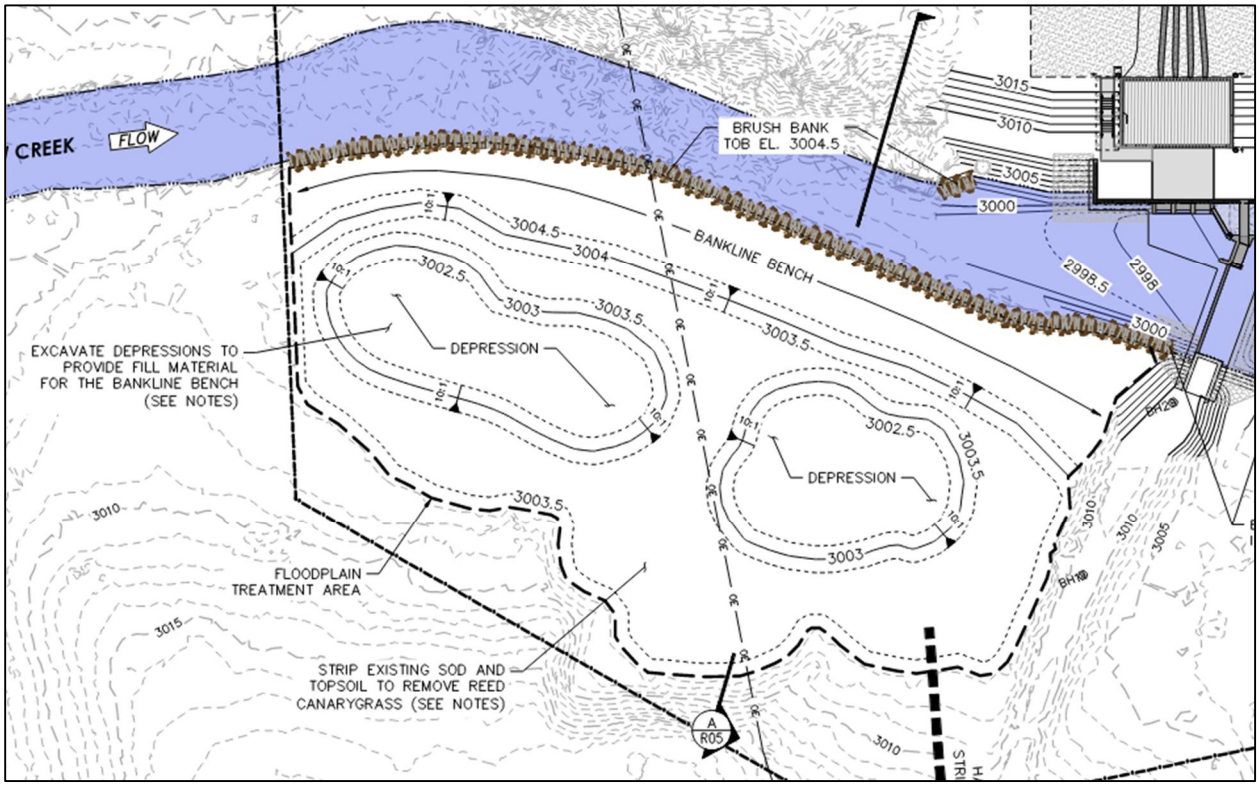


Figure 11. Diversion Area Mitigation Plan

Downstream Mitigation/Restoration Area

This area is approximately 1,200 ft downstream from the Crow Pump Diversion and includes several historic Crow Creek oxbow features (Figure 12). These oxbow features are within 0.5 feet to 2 feet of the low-flow water surface elevation in Crow Creek and would be reconnected to Crow Creek surface flows by excavating flow paths between Crow Creek and the oxbows. Approximately 1,000 lineal feet of historic oxbow would be reconnected in this manner, resulting in the expansion of existing wetlands. To further spread surface water and maximize wetland expansion, willow brush trenches would be constructed at approximately 50 feet intervals along the flow paths at variable angles. This area is currently grazed as part of the Tribal Agricultural Lease Program, and the land would be rededicated from grazing to Wildlife Habitat by expanding the boundary of adjacent Wildlife Mitigation Lands. Livestock exclusion fences would be moved to match the updated boundary between grazing land and wildlife habitat. This area is currently vegetated, and revegetation would be primarily passive recovery once the area has been released from grazing. Weed control would be implemented, as needed, to stay in compliance with Tribal and County weed regulations and to support the objective of increasing wetland functions and improving habitat.

At the upstream end of this site, a woody debris structure would be constructed across the channel by anchoring two large logs on the upstream side of mature alders that are currently present on both sides of the creek. Logs would be either cottonwood or native conifer such as Douglas-fir. Smaller logs and brush would be inserted into the logs. This woody debris structure would be fish-passable and would allow the majority of flows to remain in Crow Creek while creating a localized small backwater effect to encourage flows into the inlet channel described below (refer to Figure 12).

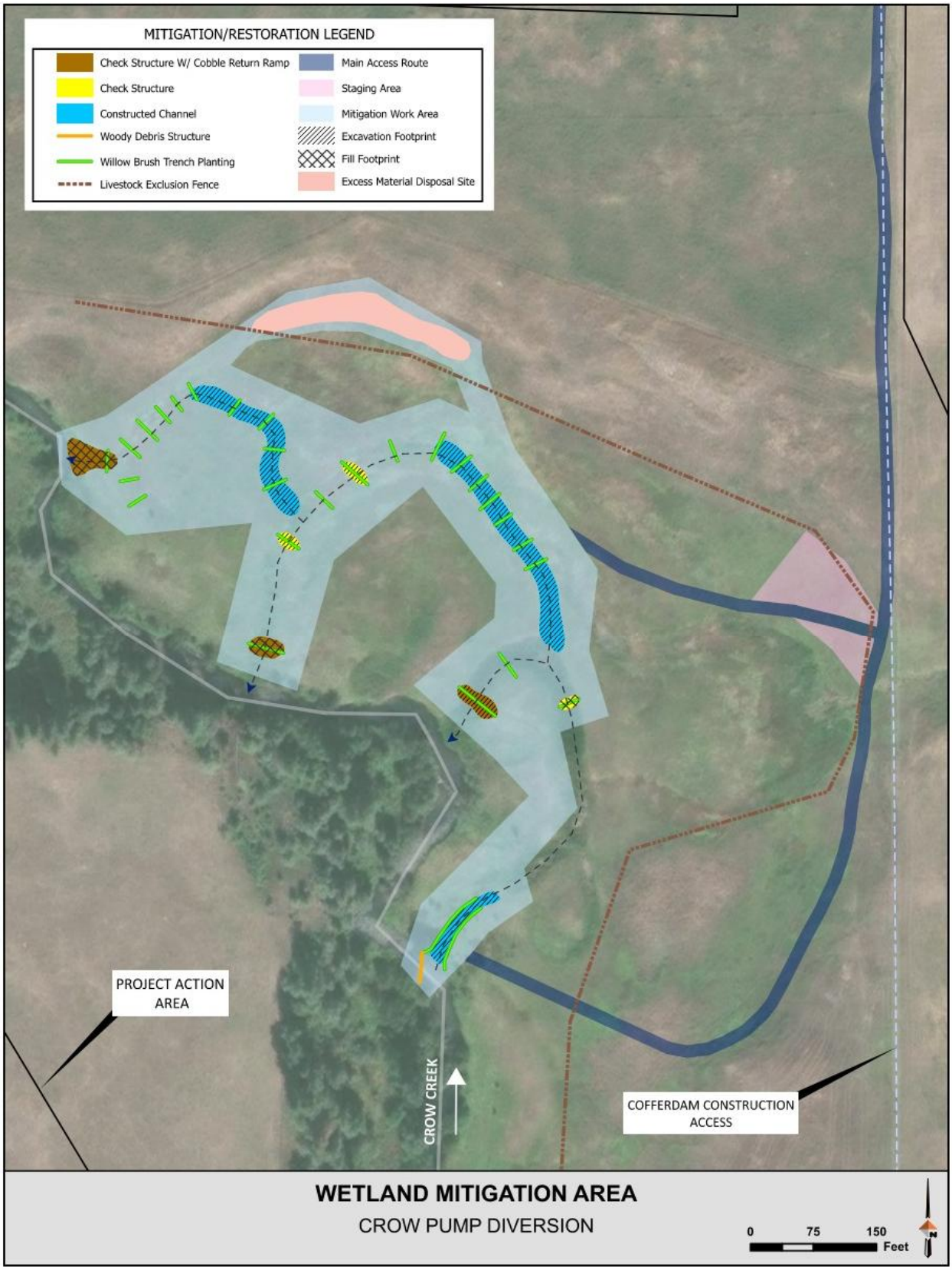


Figure 12. Downstream Mitigation/Restoration Area Components

Immediately above the woody debris structure, an inlet channel would be constructed through the right bank. In low flow years, surface water would access this area at times between mid-May and early July. In higher flow years, surface water would access the area through this inlet channel between April through late August or early September. Currently, Crow Creek would flow into this area at approximately 3.5 feet stage (approximately 350 cfs).

Below the inlet channel, a series of check structures would be constructed, along with additional excavated channels, to allow low flows to move through the site and inundate areas behind the plugs and within the existing oxbow features at depths up to 2.0 feet, but mostly in the 0.5 to 1.5 feet range. At higher flows (approximately 2.0 feet stage or 110 cfs), surface water would return to Crow Creek via the furthest downstream oxbow over a cobble- and willow-reinforced check structure. Above approximately 2.5 feet stage (180 cfs), surface flows would return to Crow Creek at all three oxbow outlets over cobble- and willow-reinforced check structures. At very high flows, it is likely that the entire area would backwater due to a bridge constriction downstream of this area.

Willows and brush would be incorporated into check structures. In addition, willow brush trenches would be installed, at grade, at intervals along the constructed channels and within the existing oxbows. These would function to slow surface flow velocities and initiate restoration of native willows at the site. Disturbed soil areas would be seeded with a native seed mix, including species such as slender wheatgrass, mountain brome, bluejoint reedgrass, and tufted hairgrass. As hydrology is restored to the site, it is likely the existing seed bank would respond and native wetland plants would replace upland species. Because of this anticipated passive response, initial active revegetation would be limited to the willow brush trenches and disturbed area seeding. If the site is not trending toward native wetland vegetation based on monitoring results after 3 to 5 growing seasons, additional active revegetation through plantings would be considered.

Site Access and Stockpiling Areas

Proposed stockpile and staging areas and access routes are indicated in Figure 3. The proposed access routes would focus on allowing a contractor access to the construction limits. Additional area and non-indicated routes would also be required for equipment maneuvering and access to certain areas (e.g., the pipeline corridor). Access and stockpiling within the construction limits would generally be non-restricted, excluding restrictions to 'non-disturbance' wetland areas and Crow Creek. Non-disturbance areas would be outlined/designated in the design plans.

Construction Timeline

Table 1 presents an estimated construction schedule for the Proposed Action Alternative. The construction schedule shown is based on a Notice to Proceed (NTP) in July 2025. A paramount goal of the Crow Pump Diversion Reconstruction is to commission the pump station by June 2026, or as soon as practicable. In the event of a delayed NTP, it is likely that construction activities would shift from what is shown in Table 1. Construction of the transition structure, pressure pipeline, and gravity pipeline can begin at any time in summer/fall of 2025.

Table 1: Estimated Construction Timeline

Construction Element	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026
Const Temp. Bypass, Cofferdam(s), and Perform Fish Salvage	■	■										
Demolition & Excavate for Diversion	■	■	■									
Drive Sheet Piles		■	■									
Construct Diversion Dam, Intake, and Wet Well		■	■	■	■	■	■	■	■			
Construct Pump Building					■	■	■	■	■	■	■	■
Construct Transition Structure	■	■	■	■	■	■	■	■	■	■	■	■
Install Pressure Pipeline	■	■	■	■	■	■	■	■	■	■	■	■
Install Gravity Pipeline & Excavate Drainage Ponds	■	■	■	■	■	■	■	■	■	■	■	■
Brush Banks, Floodplain Treatment, and Downstream Mitigation				■	■	■	■	■	■	■		

3.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

The following improvement alternatives were considered and eliminated from further consideration.

3.2.1 Structure Rehabilitation (Two Pumps or Three Pumps)

Rehabilitation of the existing Crow Pump Diversion structure was considered. The structure rehabilitation option consisted of the rehabilitation of the existing Crow Pump Diversion structure to include either two or three pumps with a total capacity of 22.5 cfs or 40 cfs, respectively, fish passage, and canal improvements and piping. The structure rehabilitation option would achieve flexibility, redundancy, and capacity project goals and would have a relative cost savings due to the reuse of components of the existing infrastructure. However, the structure rehabilitation option was ultimately not selected as it would have a shorter service life than a complete replacement, it would perpetuate the existing poor hydraulic configuration of the radial gate, the National Marine Fisheries Service velocity requirements for fish screening would not be met, and the two-pump option would have reduced capacity and less redundancy.

3.2.2 Structure Replacement (Three Pumps)

Replacement of the existing Crow Pump Diversion structure with a three-pump diversion structure was considered. This option would consist of total replacement of the Crow Pump Diversion structure with a new structure with three pumps with a total capacity of 40 cfs, fish passage, and canal improvements and piping. The structure replacement (three pumps) option would achieve all flexibility, redundancy, and capacity project goals, have the longest service life of all options considered, low maintenance needs, improved hydraulics approaching and through the radial gate, and reduced fish screen velocities. However, the structure replacement (three pumps) option was ultimately not selected. While this option would result in a longer service life, lower maintenance and improved hydraulics, it would not provide the flexibility, redundancy, and capacity that the Proposed Action Alternative could provide.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter describes the existing natural, cultural, and built environment (i.e., the affected environment) and the potential effects that the No Action Alternative and the Proposed Action Alternative would have on these resources. NEPA requires that environmental documents disclose impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented.

Section 4.1 below addresses the resource topics dismissed from detailed analysis (i.e., the resource is not present within the project area/vicinity or has no potential to be impacted). Sections 4.2 through 4.9 address the resource topics evaluated in detail in this EA. The detailed analysis includes likely beneficial and adverse effects on the human environment, including short-term and long-term effects, direct and indirect effects, and cumulative effects. Interpretation of impacts in terms of their duration, intensity, and scale are provided, where possible.

Terms referring to impact intensity, context, and duration are used in the effects analyses. Unless otherwise stated, the standard definitions for these terms are as follows:

Intensity

- Negligible: The impact would be at the lower level of detection, and there would be a small change.
- Minor: The impact would be slight but detectable, and there would be a small change.
- Moderate: The impact would be apparent, and there would be a permanent measurable change.
- Major: The impact would be highly noticeable, and there would be a permanent measurable change.

Context

- Localized impact: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts would be detectable only in the localized area.

Duration

- Short-term Effect: The effect would occur only during or immediately after implementation of the alternative.
- Long-term Effect: The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

The effects described in this EA for federally listed species followed the effects determination described in the USFWS Endangered Species Act Handbook for Section 7 consultation (USFWS, 1998). The three effects categories are:

- *Likely to Adversely Affect*: The project is likely to adversely affect a species if: 1) the species is known to occur in the AOA; and 2) project activities would disturb area or habitat elements known to be used by the species or would directly affect an individual.
- *Not Likely to Adversely Affect*: The project is not likely to adversely affect a species if: 1) The species may occur, but its presence has not been documented; and 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.

- *No effect*: The project will have no effect on a species if: 1) the species is considered unlikely to occur (e.g., range, vegetation are inappropriate); and 2) the species or its sign was not observed during surveys of the project area.

For the purposes of this document, "project action area" refers to the limits of potential improvements/ construction limits; whereas "project vicinity" refers to a much broader area, which includes the project action area and surrounding lands.

4.1 RESOURCE TOPICS DISMISSED FROM DETAILED ANALYSIS

Several resource topics typically addressed in a NEPA document are not present within the project action area/vicinity or have no potential to be impacted by the No Action or Proposed Action Alternatives. The resource topics listed below are not analyzed in detail in this EA.

4.1.1 Geologic, Minerals, and Paleontological Resources

Neither alternative would involve mining or deep materials excavation. As such, there would be no impact on the geologic setting, mineral resources, or paleontological resources that would be measurably different from existing conditions. These resource topics have been eliminated from detailed analysis in this EA.

4.1.2 Groundwater

The project action area is located within the Mission hydrogeologic subarea, which is bounded by the Salish Mountains to the west, the Mission Range to the east, and the Jocko Hills to the south; Flathead Lake and the Polson moraine mark the northern boundary. That sub area includes shallow, intermediate, deep alluvial, and bedrock aquifers with water levels generally controlled by seasonal pumping, infiltration of water from irrigation projects, and stream leakage. Depth to groundwater in the subarea can range from 40 feet to 300 feet (LaFave et al, 2004). Neither the No Action Alternative nor the Proposed Action Alternative are anticipated to have a notable effect on groundwater levels. Under current conditions (No Action) water currently does not flow within the Crow Pump Canal and groundwater recharge primarily comes from Crow Creek. These conditions would be perpetuated under the Proposed Action Alternative, as water diverted from Crow Creek would be piped along the canal alignment, removing potential recharge from canal seepage. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.3 Demographic Trends

Activities associated with the No Action Alternative and the Proposed Action Alternative are not anticipated to affect demographic trends. The decision whether to improve or not improve the Crow Pump Diversion area would not affect demographic statistics such as age, gender, marital status, religion, etc. No displacement of residents or businesses would occur under either alternative. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.4 Lifestyle and Cultural Values

The Flathead Indian Reservation consists of the Bitterroot Salish, Upper Pend d'Oreille, and the Kootenai Tribes. The Hellgate Treaty of 1855 established the Flathead Indian Reservation (CSKT, 2022a). The Tribal headquarters are located in Pablo. Historically, the Salish and Kootenai functioned through subsistence-based hunting, fishing, plant harvest, and trade, moving seasonally throughout a large territory. Over time, education and health services, Tribal enterprises, and public administration became the dominant industries (CSKT, 2021). Agriculture remains important, including those that rely on the FIIP.

Lifestyle and Cultural values would not be affected by either alternative, as these values would persist regardless of the action taken. The proposed Improvements would benefit downstream users of the Crow Pump Diversion, but the effect would be negligible to the Tribes as a whole. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.5 Timber Harvesting

The project action area is located within the Crow Creek corridor and adjacent agricultural lands and railroad easements. No timber harvesting occurs within the project action area or general vicinity; therefore, implementation of the alternatives has no potential to impact timber harvesting. This resource-use pattern has been eliminated from detailed analysis in this EA.

4.1.6 Mining

There is no active mining activity within the vicinity of the project action area (Montana Department of Environmental Quality [MDEQ], 2024). With no active or inactive mines in the area, this resource-use pattern has been eliminated from detailed analysis in this EA.

4.1.7 Wilderness

There are no federally recognized wilderness areas within or immediately adjacent to the project action area. The closest wilderness area is the Mission Mountains Wilderness, located about 10 miles east of the project area. Neither alternative would impact this resource; therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.8 Noise

The project area is located in a rural, agricultural portion of the Flathead Indian Reservation where little development exists. The primary sources of ambient noise are traffic on MT-212, United States Highway 93 (US-93), and local roadways; Crow Creek; and low intermittent sources like agricultural equipment.

Noise-sensitive receptors can include residences, schools, churches, hotels, and libraries. There are no noise receptors within the project action area; however, a small number of sensitive receptors, primarily residences, are dispersed throughout the project vicinity, with the closest receptor approximately 0.25 mile from the project.

Neither alternative would permanently increase noise levels, traffic noise, or alter the rural characteristics of the area. Under the Proposed Action Alternative, some short-term, minor, localized noise impacts associated with construction of the proposed improvements would be anticipated. Construction noise impacts would likely occur during all earthwork phases. These noise impacts would be minor and intermittent and cease once construction was completed. Therefore, this issue was dismissed from detailed analysis in this EA.

4.1.9 Light

Permanent safety lighting may be added to the proposed pump building. No sensitive light receptors are located within the project action area. No night work is anticipated during implementation of the project, with work associated with the Proposed Action Alternative primarily occurring during daylight hours. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.10 Public Health and Safety

The CSKT Tribal Police Department have responsibilities for law enforcement activities in the project area on the Flathead Indian Reservation; however, mutual aid agreements with neighboring agencies provide

for additional services when needed (BIA, 2012). The project area is located between the Charlo-Moiese and Ronan Fire Departments. CSKT Tribal Health provides health care through various health centers located on the Reservation (CSKT, 2024a), as well as numerous private entities.

An increase in heavy equipment on local roads would occur during construction, which could result in traffic incidents. This increase in traffic would be short term, negligible, and cease once construction is complete. No other direct or indirect impacts are expected to occur under the No Action Alternative or the Proposed Action Alternative. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.11 Land Use Plans

The CSKT currently has several resource management plans including a Comprehensive Resources Plan (CSKT, 1996), a Forest Management Plan (CSKT, 1995), and a Wetlands Conservation Plan (CSKT, 1999). Land Ordinance 45C also provides a vehicle for reviewing, approving, formalizing and documenting land acquisition, disposal, exchange, leasing, permitting, subdivision, or changes in land use of Tribally-owned lands on the Flathead Indian Reservation (CSKT, 2022b). The No Action Alternative and the Proposed Action Alternative would not alter the land use types in the project vicinity. However, minor fencing relocations under the Proposed Action Alternative may limit some grazing areas near proposed mitigation/restoration sites. This change would be negligible. No other direct or indirect impacts are expected to occur under the No Action Alternative or the Proposed Action Alternative, and any current or proposed work within the Crow Pump Diversion area is anticipated to be consistent with existing land use plans. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.12 Recreation

The project action area is used to divert irrigation flows from Crow Creek into the Crow Pump Canal and Post A Canal. The area surrounding the project action area is in agricultural use. No community parks, sporting facilities, or other designated recreational amenities are within or adjacent to the project action area. While a wide variety of fish species are found in Crow Creek, the project action area is not designated for recreational fishing, and it is not promoted at this location.

Under the Proposed Action Alternative, a new fishway would provide upstream passage for a number of fish species and would remove an obstacle that may have prevented fish from making their way further up Crow Creek. The level of, and location of, recreational fishing on Crow Creek upstream of the diversion could not be determined, and a detailed analysis was not conducted. Recreation has been eliminated from detailed analysis in this EA, and it is assumed that some negligible indirect benefits to recreational fishing on Crow Creek could be derived from the Proposed Action Alternative.

4.1.13 Hunting, Fishing, and Gathering

The project action area is comprised of the Crow Pump Diversion, the Crow Pump Canal, the Crow Creek corridor, MRL railroad tracks, and agricultural/grazing fields. Given its location and current habitat, hunting, fishing, and gathering are not common activities that occur or have been observed within the project action area. As previously noted, it is assumed that implementation of a new fishway at the diversion may provide some benefit to fisheries upstream of the project action area.

4.2 LAND RESOURCES – DETAILED ANALYSIS

4.2.1 Topography

The Flathead Indian Reservation is located in northwest Montana within the Flathead Hills and Mountains region. The topography within the region consists of deep valleys bordered by mountains trending north to south. In the valleys, broad floodplains are bordered by sloping terraces and alluvial fans modified by glaciation (Natural Resources Conservation Service [NRCS], 2006). Within the project vicinity, low grassland and crop lands are typical. The project action area is primarily located along the Crow Creek corridor, which flows from east to west through the project action area. The topography in the immediate vicinity generally slopes toward Crow Creek from the north and south. Variations from the natural topography exist primarily due to the diversion, canal, railroad, and roads. The topography within the project action area is primarily flat terrain, with elevations of approximately 3,000 feet above MSL near the diversion structure.

Impacts to Topography

No Action Alternative

Other than operation and maintenance activities that currently occur at the Crow Pump Diversion, the No Action Alternative would not require the movement or importation of fill material or grading of existing material. The No Action Alternative would not change the existing ground elevations within the project area.

Proposed Action Alternative

The Proposed Action Alternative would require over 4 acres of excavation/fill material placement and over 5.5 acres of grading that would affect topography. Excavation and fill within the creek, along the creek bank, and within the Crow Pump Canal, and excavation to create new drainage ponds would result in 2.9 acres of permanent topography changes, including burial of the open canal.

Approximately 4,700 cubic yards (CY) of material would be excavated for the new gravity pipeline, and approximately 1,700 CY of imported bedding and 7,700 CY of native backfill material would be required to install the pipeline. Native backfill would be sourced from excavated material and the proposed drainage ponds (with approximately 3,000 CY of backfill material coming from the drainage pond excavation). Approximately 0.8 acres of reed canarygrass sod would be stripped (2,500 CY of sod) to remove the invasive plant from the floodplain. At the downstream mitigation/restoration area, 0.3 acres of historic side channel would be excavated to form channel paths, with another 0.1 acre of fill to construct check structures.

Conversion of the Crow Pump Canal from an open irrigation ditch to a buried pipe would restore the area to a more natural topography with more natural runoff patterns, and the slight changes in topography along the creek corridor would help to restore wetland and floodplain functions in the area. Overall, these slight changes to the general topography of the area are anticipated to be minor and beneficial over the long term by restoring some of the natural topography within the project action area and addressing habitat and floodplain impairments. No indirect impacts to topography are anticipated.

4.2.2 Soils

The NRCS Web Soil Survey for the project action area shows a range of soil types (Table 2 The soil types are generally very deep and formed in glacial outwash or alluvium (NRCS, 2024).

Table 2. Soil Types within Project Area

Soil Name	Acres within Project Area	Farmland Classification
Belton silt loam, 8 to 15 percent slopes	8.0 (7.9%)	Farmland of local importance
Belton-Kerl silt loams, 2 to 4 percent slopes	4.9 (4.9%)	Farmland of Local Importance
Belton-Kerl silt loams, 4 to 8 percent slopes	5.5 (5.4%)	Farmland of Local Importance
Bohnly silt loam, 0 to 2 percent slopes	9.1 (9.1%)	Not prime farmland
Colake silt loam, drained, 0 to 1 percent slopes	11.5 (11.5%)	Prime farmland if irrigated
Gird silt loam, drained, 0 to 1 percent slopes	0.7 (0.7%)	Prime farmland if irrigated
Irvine silty clay, 8 to 15 percent slopes	1.8 (1.8%)	Not prime farmland
Post silt loam, 0 to 2 percent slopes	10.7 (10.7%)	Farmland of local importance
Post silty clay loam, 2 to 4 percent slopes	14.9 (14.9%)	Farmland of local importance
Post-Ronan-Water complex, 2 to 8 percent slopes	30.4 (30.3%)	Farmland of local importance
Xerofluvents, 0 to 2 percent slopes	2.8 (2.8%)	Not prime farmland

Impacts to Soils

No Action Alternative

Other than operation and maintenance procedures that currently occur, the No Action Alternative would not require ground disturbance. Therefore, the No Action Alternative is not anticipated to have direct or indirect impacts on soils.

Proposed Action Alternative

Under the Proposed Action Alternative, approximately 4 acres of excavation, 5.5 acres of grading, and 17.5 acres of general ground disturbance for staging/stockpiling, construction equipment maneuvering, and access would occur during proposed diversion and canal improvements and wetland/floodplain restoration efforts. These disturbed areas would be seeded or planted with native vegetation following construction; however, some erosion may still occur during rain and wind events until these disturbed areas have stabilized. This impact would be noticeable in the short term after construction but would diminish over time. Areas where heavy equipment maneuvering would occur (e.g., temporary access routes and staging areas) may compact soils leading to poor infiltration, reduction in soil nutrients, and reduced ability for vegetation to reestablish. To address this, disturbed areas would be roughened before seeding occurs to encourage infiltration and plant growth. While the Proposed Action Alternative would have minor, adverse, direct localized impacts on soils in the short term, grading improvements and vegetation treatments along the creek floodplain may result in sediment deposition along the corridor, replenishing soils and nutrients. Therefore, the Proposed Action Alternative would have a minor, long term, direct beneficial impact on soils.

4.3 WATER RESOURCES – DETAILED ANALYSIS

4.3.1 Surface Waters and Wetlands – Clean Water Act Permitting

A formal aquatic resources delineation was conducted at the Crow Pump Diversion project action area on various days in May, June, July, and August 2024. Approximately 2.57 acres of waterway were delineated, including 2.51 acres (3,878 linear feet) of the Crow Creek and 0.06 acre (415.5 linear feet) of the Post A Canal (CSKT, 2024b). The Crow Pump Canal is also located within the project action area; however, the canal has not functioned for several years (with the Crow Pump not operating), has no operational waterline, and is heavily vegetated. As such, the Crow Pump Canal was not delineated as a waterway.

Crow Creek is a perennial creek that enters the project action area from the east and exits to the northwest. Through the project action area, the river width varies from 20 to 40 feet wide. The creek is

bordered by emergent palustrine and shrub-scrub wetlands, transitioning to a riparian shrub and woodland community. Once outside the project action area, Crow Creek flows west for three miles into the Lower Crow Reservoir, which drains into the Flathead River. The Flathead River, in turn, flows into the Clark Fork River, which eventually conveys flow to the Columbia River. When the diversion pump is operational, water from Crow Creek is diverted into the Crow Pump Canal, which flows into Post A Canal.

Post A Canal is found at the very southern limits of the project action area. The active canal flows north/northwest to the base of the Moiese Hills and includes a series of laterals and sub-laterals that deliver water to individual farm and ranch tracts and also to Ninepipe Reservoir via another canal. The Post A Canal has a uniform width of approximately 10 feet.

Approximately 10.32 acres of wetlands were delineated within the project action area. This includes approximately 9.80 acres of palustrine emergent wetland and 0.52 acres of palustrine shrub-scrub wetland. Wetlands were identified along the Crow Creek floodplain and historic oxbow features, within Crow Pump Canal, and along Post A Canal within the project limits. Figures 13 through 15 present delineated wetlands and surface waters within the project action area (CSKT, 2024b).

Crow Creek, Post A Canal, and all wetlands delineated within the project action area would likely fall under the jurisdiction of the USACE and CWA Section 404. The CSKT oversees CWA Section 401 certification. In addition, the CSKT Shoreline Protection Program regulates all natural aquatic resources within the Flathead Indian Reservation, as outlined in CSKT Shoreline Protection Ordinance 64A and ALCO 87A.

Impacts to Surface Waters and Wetlands

No Action Alternative

The No Action Alternative would not require modifications to, or placement of fill within, surface waters and wetlands, as no construction would occur. No wetland mitigation or floodplain restoration would occur. Under the No Action Alternative, operational limitations would persist, with only general maintenance of the existing system continuing. The No Action Alternative would have a long-term, adverse effect on the operation and distribution of irrigation surface water within the Charlo Area. In the absence of the project, the water supply to the Charlo Irrigation Service Area would likely be stressed when the minimum instream flows within Post Creek become enforceable in fall of 2026 and the outlet works construction project on Kicking Horse Dam begins. The No Action Alternative would also not improve overall functions and values within the Crow Creek system, and sediment and debris concerns and lack of upstream fish passage would be perpetuated.

Proposed Action Alternative

Under the Proposed Action Alternative, work would involve replacing the existing Crow Pump Diversion, replacing a large portion of the Crow Pump Canal with a pipeline (from the head of the canal to the inlet of the railroad crossing siphon), and restoring and enhancing the Crow Creek corridor. To complete the diversion improvements and restoration/enhancement efforts, approximately 1.118 acres of wetlands and 0.146 acre (509 linear feet) of potentially jurisdictional waterways would be permanently impacted due to placement of fill material. Approximately 0.194 acre of wetlands and 0.193 acre (401 linear feet) of waterways would be temporarily impacted due to construction means and methods, short-term cofferdams, and temporary disturbance of vegetation.

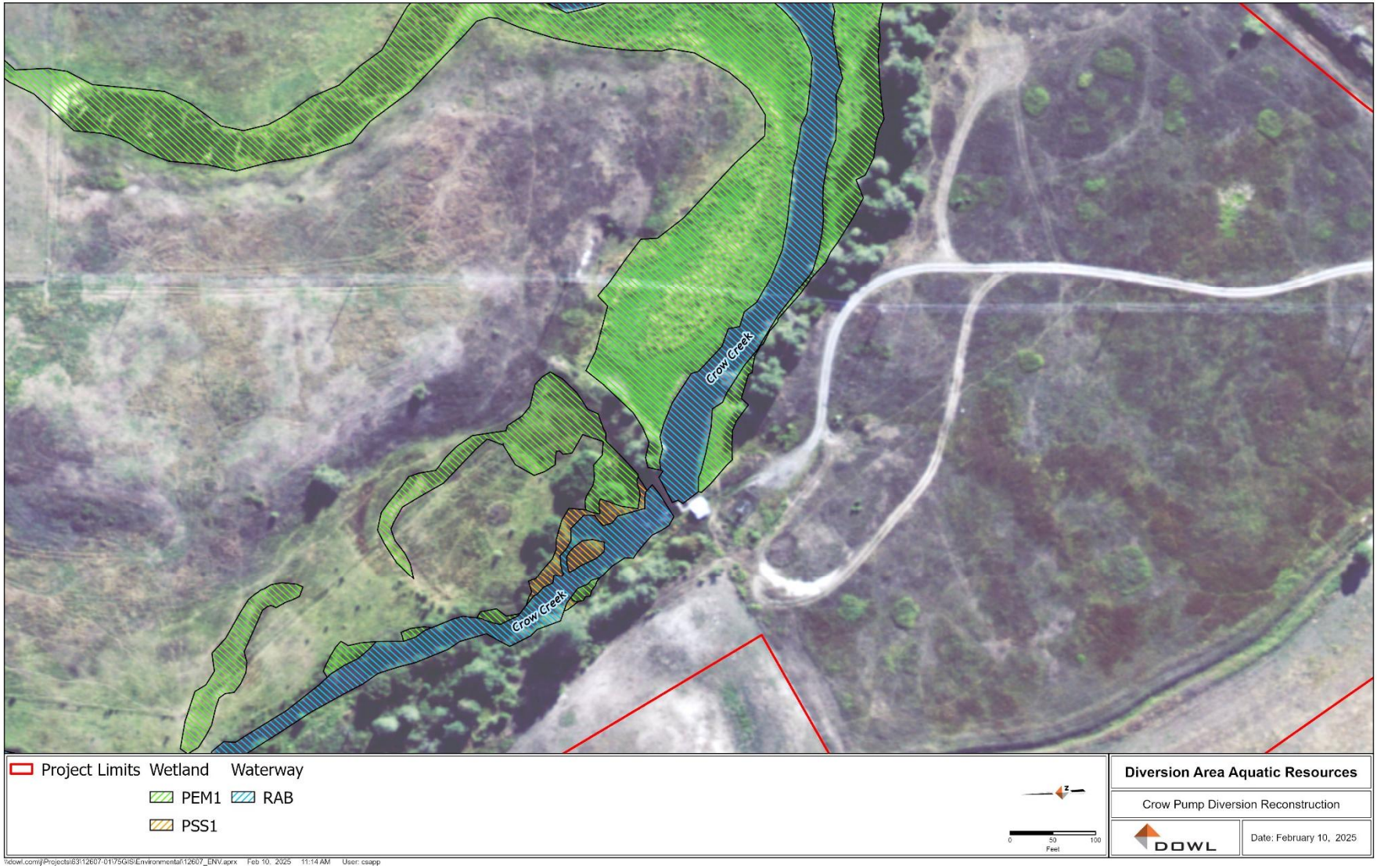


Figure 13. Delineated Aquatic Resources in Diversion Area

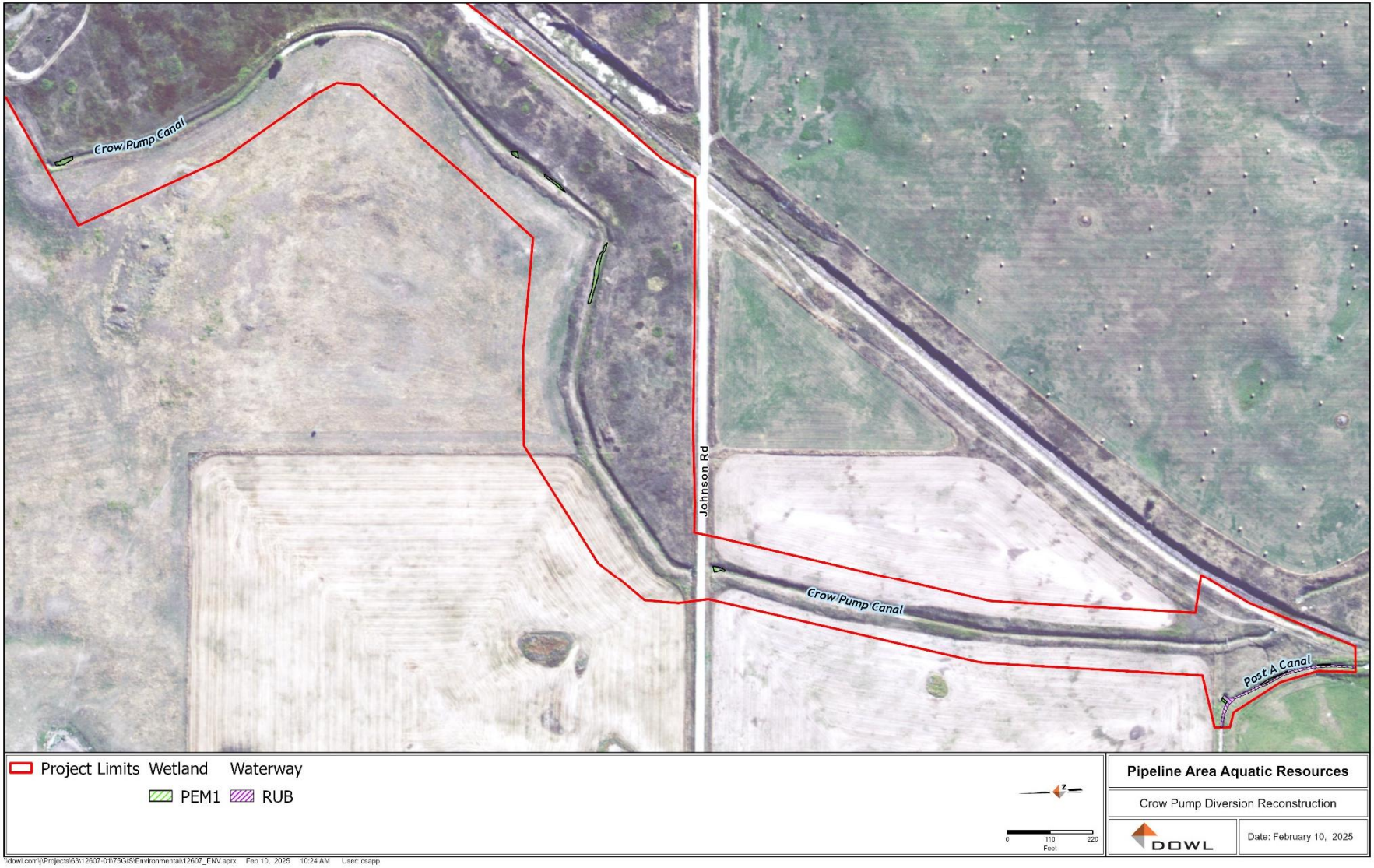


Figure 14. Delineated Aquatic Resources in Pipeline Area

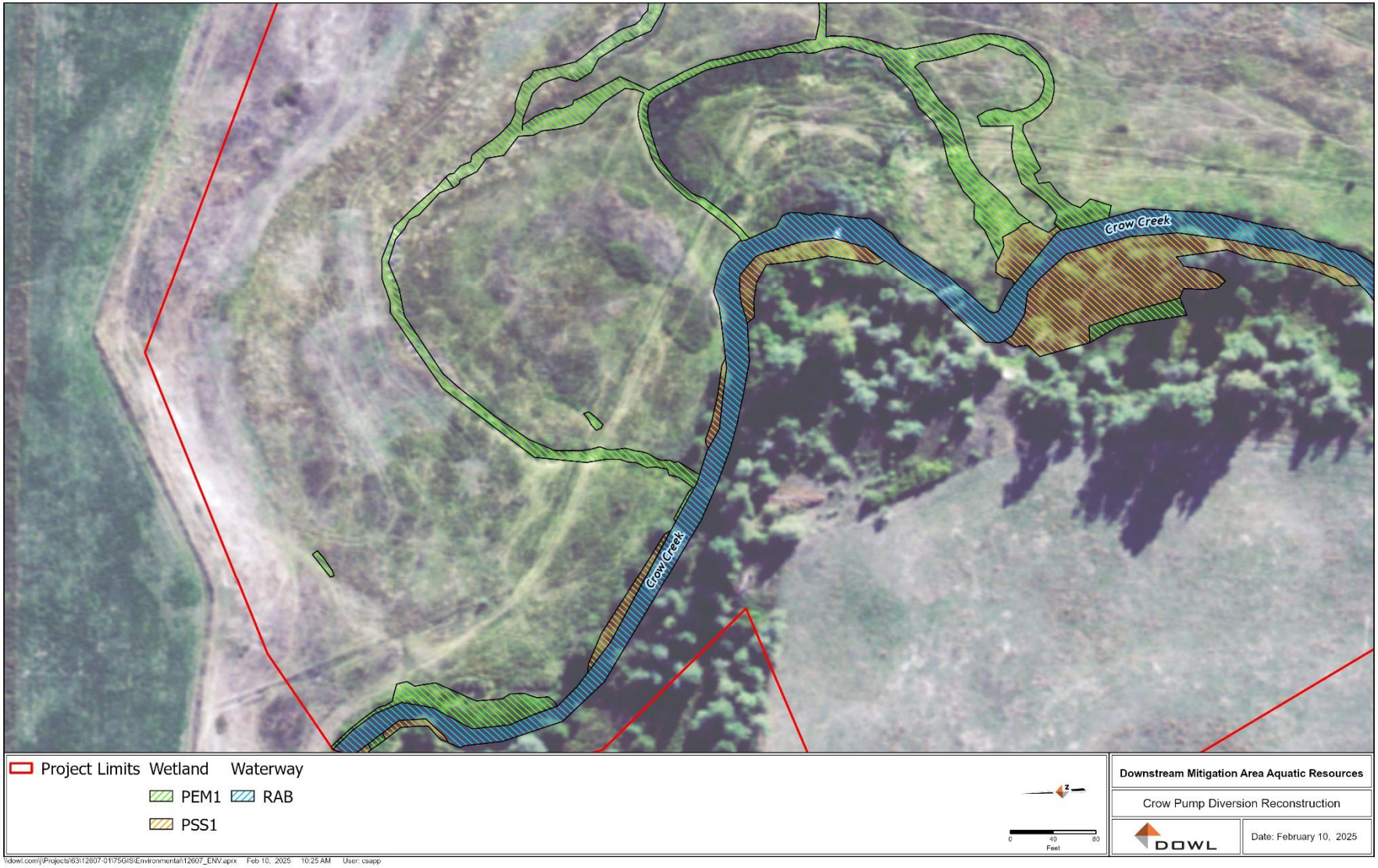


Figure 15. Delineated Aquatic Resources in Downstream Mitigation Area

While placement of fill within wetlands and waterways can be considered a negative impact, these impacts are needed to help reduce capacity constraints and hydraulic inefficiencies associated with the Crow Pump Diversion, Crow Pump and Crow Pump Canal. These impacts are also needed to help restore and enhance natural functions and processes of Crow Creek and associated wetland systems by establishing, restoring, and enhancing wetlands; re-establishing bank vegetation; providing improved fish passage; and improving floodplain connectivity.

The bank stabilization and floodplain and aquatic resource restoration and enhancement activities outlined in the Proposed Action Alternative would be used as compensatory mitigation to offset wetland impacts associated with the diversion infrastructure, as regulated by the USACE and CSKT Shoreline Protection Board. The downstream mitigation area would generate surplus wetland credits, which would be used to offset future CSKT projects in the Mission Valley. Mitigation requirements, using wetland functional credits, are documented in a Wetland Mitigation Plan as part of permitting. All mitigation treatments would be monitored annually for at least five years to determine if wetland areas are establishing or if additional adaptive management is needed. Overall, the Proposed Action Alternative would have both direct and indirect, long-term beneficial impacts on surface waters and wetlands in the area.

4.3.2 Surface Water Quality

The segment of Crow Creek within the project action area is categorized as "B-1" under the July 2023 CSKT Surface Water Quality Standards and Antidegradation Policy, which also sets water quality standards for select characteristics by water quality category (CSKT, 2023). Waters classified as B-1 must be maintained to be suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; wildlife (birds, mammals, amphibians and reptiles); the growth and propagation of salmonid fishes and associated aquatic life; and agricultural and industrial water supply purposes (CSKT, 2023).

Impacts to Surface Water Quality

No Action Alternative

Under the No Action Alternative, current operation and maintenance activities would continue. No other improvements or construction activities would occur. Long-term, minor, adverse impacts on water quality are anticipated, as the current configuration of the irrigation infrastructure results in debris accumulation and sediment deposition at the diversion and bank erosion along the stream reach.

Proposed Action Alternative

Improvements to the Crow Pump Diversion under the Proposed Action Alternative would not permanently produce or increase potential water quality impairments within Crow Creek. Native brush bank treatments would be installed at identified locations upstream and downstream of the new diversion structure to reduce erosion and downstream sediment transport. Additionally, enhancing existing wetlands and establishing new wetlands would improve nutrient capture and filtering of contaminants before reaching Crow Creek. Overall, the Proposed Action Alternative is anticipated to generally have a minor, long-term, beneficial impact on water quality.

The Proposed Action Alternative would result in one or more acres of ground disturbance, and a temporary increase in sediment laden construction stormwater and short-term increases of turbid water within the creek are anticipated.

Section 402 of the CWA pertains, in part, to the maintenance of water quality by managing stormwater runoff from projects affecting one or more acres and requires that the overall project design provides for the protection of waters. On the Flathead Indian Reservation, the EPA administers this section of the CWA under the National Pollutant Discharge Elimination System (NPDES). A NPDES Construction Storm Water General Permit would be required under the Proposed Action Alternative. As part of the NPDES permit, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented by the construction contractor. The purpose of the SWPPP is to identify temporary erosion and sediment control measures to be installed during construction, and other best management practices (BMPs), to prevent sediment-laden storm water from exiting the construction site.

To minimize turbid water within Crow Creek during construction, in-channel work would be accomplished by constructing a bypass channel around the work area using cofferdams. The bypass channel would be appropriately dewatered to an upland location, with the contractor required to gradually dewater and re-water the work area, with minimization measures in place to address sediment mobilization. Excavated material from the temporary bypass channel would be stockpiled on the floodplain north of the creek and away from surface water, which is consistent with project mitigation activities. The cofferdams would be breached upon completion of in-channel work, and flows within Crow Creek would resume.

By strictly adhering to the SWPPP, implementing the proposed BMPs outlined in the SWPPP for erosion and sediment control, and strictly following the in-channel work plan, short-term water quality impacts would be minor.

4.3.3 Water Rights

The Crow Pump Diversion project action area lies within Basin 76L of the State of Montana Water Rights Adjudication Bureau. Like most administrative basins in Montana, a final decree for water rights administration has not been issued for Basin 76L. Therefore, the irrigators' rights to FIIP water are not currently settled under law. The CSKT-MT Compact was introduced in the 2015 Montana legislative session and signed into law by Governor Bullock on April 24, 2015. The U.S. Congress ratified the Compact on December 21, 2020, and the CSKT did the same on December 29, 2020. The Compact became effective on September 17, 2021, when it was signed by the Secretary of the Interior. The CSKT-MT Compact quantifies the FIIP right as part of the Tribal Water Right, with an 1855 priority date, and ensures FIIP the diversion allowances to meet historic farm deliveries. The Crow Pump Diversion site is one of the points of diversion where water is diverted into the FIIP irrigation system, allowing FIIP to convey and deliver the water to the irrigators within the Charlo Irrigation Service Area at their individual farm turnouts.

Compact-initiated minimum instream flows, as shown in Table 3, will establish new hydrological flow patterns in Post Creek, enforceable in September 2026, and Crow Creek, enforceable in September 2028. These instream flow schedules have water rights with *time immemorial* priority dates, meaning that they will have priority over irrigation diversions. In addition, an outlet works construction project on Kicking Horse Dam is pending, which would temporarily reduce the amount of water that can be transferred from Kicking Horse Reservoir to Ninepipe Reservoir. Because of these factors, there is a heightened importance on FIIP's ability to opportunistically divert water when surplus water is available in the streams so that water can be held in storage for later-season deliveries.

Table 3: Minimum Enforceable Flows (MEF) within the Project Vicinity

All Values in cfs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Post Creek above Crow Pump Canal												
MEF	20	20	20	30	60	140	120	80	40	40	30	20
Normal Year	20	20	30	35	88	160	184	128	92	45	38	28
Wet Year	35	22	32	48	96	155	268	155	106	46	36	28
Crow Creek below Crow Pump Canal												
MEF	25	25	25	40	60	55	22	22	25	25	25	25
Normal Year	30	30	36	40	70	80	36	36	36	36	36	36
Wet Year	35	35	40	40	90	156	110	40	40	40	40	40

Source: (DOWL, 2024)

Impacts to Water Rights

No Action Alternative

The No Action Alternative would directly affect the FIIP's ability to supply water to irrigators within the Charlo Irrigation Service Area. Currently, the diversion pump is inoperable, and the Crow Pump Diversion system has capacity and reliability limitations. The No Action Alternative would not address the reduction in volume at Ninepipe Reservoir due to the fall 2026 minimum instream flows that will be enforced on Post Creek and due to the outlet works project at Kicking Horse Dam. Under the No Action Alternative, the existing Crow Pump Diversion would not be available to offset the Charlo Irrigation Service Area's reliance on Post Creek and would not provide additional water to Ninepipe Reservoir. Without a storage buffer at Ninepipe, water supply in the Charlo area would be further stressed and irrigation demands may not be met. Therefore, the No Action Alternative would have a direct, moderate, adverse impact on water rights in the Charlo Irrigation Service Area.

Proposed Action Alternative

The Proposed Action Alternative would return the Crow Pump Diversion to operation, providing improved reliability, redundancy, and a measurable increase in diversion capacity to better serve the irrigators within the Charlo Irrigation Service Area. According to the 2024 Hydrology Report (DOWL, 2024), during the irrigation off-season at least 5 cfs to 10 cfs is available, indicating substantial off-season water availability for pumping. In May and June, the typical peak stream months for Crow Creek, at least 40 cfs is available for diversion after upstream minimum instream flow enforceability.

Since the current facility is not functional and has not been operated in several years, the Proposed Action Alternative would not interrupt water supply or availability during construction, and temporary impacts on water users are not anticipated. Overall, the Proposed Action Alternative would offset the Charlo Irrigation Service Area's reliance on Post Creek. Additionally, the Proposed Action Alternative would provide the ability to send water to Ninepipe Reservoir before and during the Kicking Horse Dam Outlet Works construction project, providing a much-needed storage buffer and additional flexibility while Kicking Horse Reservoir is out of commission. Therefore, the Proposed Action Alternative would have a direct, moderate, beneficial impact on water rights.

4.3.4 Floodplains

Federal Emergency Management Agency Flood Insurance Rate Maps indicate that a portion of the project action area, including the existing Crow Pump Diversion, is mapped as Zone A, areas determined to be in the 100-year floodplain (FEMA, 2013). However, CSKT is no longer enrolled in, or regulated under, the National Flood Insurance Program.

Floodplains for the project action area consist of functional floodplains, or "flood-prone areas," which help spread water over larger areas, provide ecological benefit and habitat value, and experience flooding more frequently than regulatory floodplains. These functional floodplains have been confined through man-made infrastructure and have been altered by land management practices. Land use changes within the functional floodplains have resulted in changes to the wetland and riparian vegetative communities. The existing functional floodplains provide less value in their current condition than they would in a more natural condition.

Impacts to Floodplains

No Action Alternative

The No Action Alternative would have no direct or indirect impacts on existing functional floodplains, as encroachment within the existing floodplains would not occur. The impaired floodplain functions of the existing condition would be perpetuated.

Proposed Action Alternative

The CSKT is no longer enrolled in the National Flood Insurance Program. So, while over 1,000 CY of fill material, concrete, and riprap would be placed within and adjacent to Crow Creek, a floodplain development permit is not required.

Regarding the functional floodplain, the Proposed Action Alternative would re-establish floodplain hydrology and enhance existing wetlands and support woody vegetation establishment. Floodplain improvements would include bank treatments, changes in micro-topography, and enhancements to restore more natural vegetation conditions adjacent to Crow Creek at both the diversion area and the downstream mitigation area. Overall, the Proposed Action Alternative would have direct, moderate, long-term beneficial impact to floodplains and floodplain functions.

4.4 AIR QUALITY – DETAILED ANALYSIS

National Ambient Air Quality Standards (NAAQS) have been established for six criteria pollutants: carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. Vehicle emissions are major sources of many of these pollutants. Sources of particulate matter include the suspension of dust through ground-disturbing activities, road dust from vehicles, and emissions from internal combustion engines.

The project area is located in an area designated as having attained the desired levels for NAAQS criteria pollutions (EPA, 2024). Therefore, conformity procedures under NAAQS do not apply. Air quality in this general area is normally good. Air pollutants produced in the immediate vicinity of the project area are limited to dust from unpaved roads and vehicular emissions.

Impacts to Air Quality

No Action Alternative

Under the No Action Alternative, temporary or long-term impacts on air quality would not occur, as construction activities would not be implemented. The No Action Alternative would not result in any meaningful increase in traffic volumes, vehicle mix, or any other factors that would cause an increase in emissions impacts. Therefore, the No Action Alternative would have no direct or indirect impacts on air quality.

Proposed Action Alternative

Under the Proposed Action Alternative, a negligible, short-term deterioration of air quality may be experienced due to vehicle emissions from the operation of construction equipment, demolition of concrete irrigation structures, dust generated by trenching and excavation, and dust generated from equipment operation on unpaved roads. This deterioration would be a localized condition that would not persist after completing the improvements. Water may be sprayed on disturbed areas and roadway surfaces within the project area to suppress any dust generated. Overall, the amount of dust generated would not exceed what is currently generated in the project vicinity. No potential indirect impacts on air quality resulting from the construction of the Proposed Action Alternative would be anticipated.

4.5 LIVING RESOURCES – DETAILED ANALYSIS

4.5.1 Ecosystems and Biological Communities

The Crow Pump Diversion project action area is within the broad, intermontane, and largely treeless Flathead Valley ecoregion of the Northern Rockies. Agriculture, rural residential, suburban, and commercial activity dominate this ecoregion. The area is underlain by Quaternary glacial outwash, till, lake sediments, and alluvium, supporting a foothills prairie ecosystem. Mean annual precipitation ranges from 14-25 inches per year, with an average of 70 to 91 frost-free days per year (Woods et al., 2002).

The topography within the project area is primarily flat terrain, with elevations at or around approximately 3,000 feet above MSL. Crow Creek and the associated riparian corridor are found within and directly adjacent to the project action area near the diversion structure, with grassland, wetlands, and prior or existing croplands extending beyond the creek and riparian corridor in all directions.

Impacts to Ecosystems and Biological Communities

No Action Alternative

An impaired aquatic ecosystem with no upstream fish passage and no screening of the pump intakes to prevent fish entrainment would be perpetuated under the No Action Alternative. The spread of noxious and invasive weeds within the project action area would also continue. Perpetuating these impairments results in moderate, long-term negative impacts to ecosystems and biological communities in the project action area.

Proposed Action Alternative

Under the Proposed Action Alternative, the existing diversion structure and pump intake would be replaced with new structures that accommodate upstream passage of fish species at various life stages. The new intake would include a profile bar fish screen with 1.75-millimeter screen openings to prevent fish from entering the pump station wet well. Aquatic and terrestrial restoration and enhancement of degraded habitats are also proposed and include natural stabilization of stream banks, enhancement and expansion of wetland areas, and improvements to adjacent floodplains. Therefore, implementation of the Proposed Action Alternative would provide long-term beneficial impacts on biological communities and

ecosystem functions in the area, as further specified below in the biological resources sections. Indirect impacts would not be anticipated.

4.5.2 Wildlife

4.5.2.1 General Terrestrial and Aquatic Species

Agricultural-cultivated crops; Rocky Mountain lower montane, foothill, and valley grasslands; wetland and riparian systems; and developed roads and railroads are the dominant habitat types within the project action area and general vicinity (Montana Natural Heritage Program [MTNHP], 2024a). While previous land management, including agriculture and grazing, has altered the project action area and reduced overall habitat suitability, the mosaic of habitats found in the area does have the potential to support various mammals, amphibians, reptiles, and birds. The riparian corridor along Crow Creek, in particular, is important for nesting and foraging birds, and acts as a travel corridor for large mammals. A portion of the project area downstream of the diversion is currently managed as wildlife habitat under the Kerr/SKQ Dam mitigation program. This riparian corridor also provides cover, food, and water for a variety of mammals and amphibian species.

Small mammals such as meadow voles (*Microtus pennsylvanicus*), montane voles (*Microtus montanus*), American beaver (*Castor canadensis*), and American mink (*Neogale vison*) have been documented in the area. Larger mammals, including white-tailed deer (*Odocoileus virginianus*), also occur. Common gartersnake (*Thamnophis sirtalis*), American bullfrog (*Lithobates catesbeianus*), Columbia spotted frog (*Rana luteiventris*), and western toad (*Anaxyrus boreas*) are associated with the area (MTNHP, 2024b).

The CSKT has documented several fish species within this reach of the Jocko River, including largescale sucker, longnose sucker, Westslope cutthroat trout, rainbow trout, mountain whitefish, brown trout, and brook trout. The existing Crow Pump Diversion acts as a barrier for fish species at varying life stages. Additionally, the pump intake is not screened to exclude fish from entering, leaving fish entrained in the wet well and vulnerable to harm or death.

Impacts to Terrestrial and Aquatic Species

No Action Alternative

The No Action Alternative would result in moderate, long-term adverse impacts to terrestrial and aquatic species, as current conditions, including aquatic impairments/obstructions and degraded habitat (due to land management practices) would be perpetuated. Issues related to fish passage and fish mortality would continue to persist.

Proposed Action Alternative

Under the Proposed Action Alternative, approximately 4 acres of excavation, 5.5 acres of grading, and 17.5 acres of general ground disturbance for staging/stockpiling, construction equipment maneuvering, and access would occur during proposed diversion and canal improvements and wetland/floodplain restoration efforts. This would involve temporary or permanent impacts to wetland habitat, upland habitat, and aquatic (creek) habitat.

Under the Proposed Action Alternative, over 25 acres would be formally rededicated from agricultural uses to a protective status and managed for habitat purposes under the wildlife management program. A new fence would prevent grazing within the floodplain, protecting the active restoration efforts at the diversion area and the downstream mitigation area, and allowing for passive restoration of the wetland in an oxbow feature just upstream of the diversion area. The proposed restoration treatments along the Crow Creek corridor would shift vegetative communities toward more scrub/shrub or riparian cover types, which provide additional wildlife habitat.

Construction-related impacts to terrestrial wildlife would primarily include the temporary or permanent loss of habitat and the displacement of resident wildlife from the construction area; possible injury or death to smaller, less mobile animals, including small burrowing mammals, snakes, and frogs; and noise disturbance.

The Proposed Action Alternative involves replacing the existing Crow Pump Diversion with a new diversion structure that includes a grouted riprap fishway and an intake protected with a fish screen. Brush bank treatments within the diversion area and a woody debris structure across the creek channel downstream of the diversion would also be installed. These improvements would allow for improved year-round fish passage of a wide variety of fish species and life stages. Installing a new fish screen at the intake to the pump station wet well would help reduce or eliminate fish entrainment and fish mortality.

In addition to the fish passage at the diversion, improvements to the floodplain on the north side of the creek are also proposed through grading and excavation techniques that would remove invasive plant species and provide backwater channels and depressed areas for wetland reestablishment. Overall, the Proposed Action Alternative would have some short-term adverse impacts during construction, but the long-term impacts would be moderate and beneficial for terrestrial wildlife and aquatic species.

To minimize potential construction-related impacts to wildlife habitat, work would be confined to the defined construction limits to the extent practicable, with designated vegetation preservation areas noted on design plan sheets. Temporarily disturbed areas would be seeded or planted with native vegetation following construction, and vegetation is anticipated to return after completion of the project through this seeding/planting effort. BMPs, as outlined in Chapter 5, would be installed during construction to reduce noxious weed establishment and limit erosion and reduce sediment from entering surface waters. A temporary bypass channel would also be established to avoid short-term loss of aquatic species during construction. Fish salvage would be performed, as needed, between July and August 2025 in conjunction with the placement of cofferdams and opening of the temporary bypass channel. Additional fish salvage may be needed upon removal of the cofferdams and opening of the diversion structure. CSKT Fisheries staff would implement appropriate fish collection technique(s) to salvage and relocate fish to Crow Creek.

No indirect impacts to wildlife would be anticipated under the Proposed Action Alternative.

4.5.2.2 Avian Species

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, pursuing, hunting, taking, capturing, killing, selling, or possessing any migratory bird, part, nest, or product is unlawful (16 USC 703-712). "Taking" of species protected by the MBTA includes the removal of vegetation containing active nests of protected species. Birds protected under the MBTA include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, and swallows; feathers, plumes, nests, and eggs are also protected. A complete list of protected species is found in Code of Federal Regulations (CFR) Title 50, Part 10.13. Well over 100 bird species have been documented in the general area (MTNHP, 2024b). This is likely due to the close proximity to Ninepipe Reservoir and the kettle ponds scattered throughout the Charlo Irrigation Service Area.

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act of 1940 and receive special state status. According to CSKT data, no bald or golden eagle nests are documented near the project action area. During project field visits, no bald or golden eagle nests or individual birds were observed within or adjacent to the project limits.

Impacts to Avian Species

No Action Alternative

The No Action Alternative would have minor, long-term adverse impacts on migratory birds, as impaired wetland and riparian habitat would be perpetuated, potentially limiting use by nesting and foraging birds.

Proposed Action Alternative

The Proposed Action Alternative would include enhancing existing wetlands and the floodplain adjacent to Crow Creek. These aquatic and terrestrial rehabilitation efforts would improve avian habitat within the project action area and may result in minor, long-term benefits to migratory birds.

Active nests likely occur within the project action area, and construction has the potential to impact nesting birds protected under the MBTA if tree and shrub removal, ground-clearing activities, and equipment maneuvering occur during the bird-breeding season (between April 15 to August 16). As part of the Proposed Action Alternative, compliance with MBTA guidance would be required, and disruption to nesting birds and disturbance of active nests avoided. Conservation measures, as outlined in the 2024 Biological Assessment and Chapter 5 of this EA, to protect nesting migratory birds, their eggs, hatchlings, or fledglings would be implemented to avoid impacts during construction. This may include removing any suitable nesting habitats (i.e., trees and shrubs) existing within the construction limits, which would be affected by construction, outside of the nesting season (between August 16 to April 15) when possible. If vegetation clearing cannot be avoided during the entire nesting season, it should at least be avoided, to the greatest extent practicable, during the peak nesting season (which is May 1 to July 15). Should vegetation clearing need to occur during the breeding season (refer to Section 3.1.2 for construction schedule), areas to be disturbed would be monitored for nesting migratory species by a qualified biologist prior to vegetation clearing. If an active nest, including before or after the local nesting window, is discovered, the nest would be left in place and protected until the young hatch and depart.

No bald or golden eagle nests have been documented within the project vicinity. Therefore, seasonal construction noise restrictions would not be anticipated.

4.5.3 Threatened and Endangered Species

The USFWS Information for Planning and Consultation database was reviewed to identify threatened and endangered species that may occur within the project action area and/or vicinity. Four threatened and one proposed threatened species were identified as potentially occurring within the action area (USFWS, 2024). The North American wolverine (*Gulo gulo luscus*) and Canada lynx (*Lynx canadenisis*) are *unlikely to occur* within the project action area. The yellow-billed cuckoo (*Coccyzus americanus*), grizzly bear (*Ursus arctos horribilis*), and monarch butterfly (*Danaus Plexippus*) *may occur* within the project action area. A full description of the threatened and endangered species analysis is found in the Biological Assessment report for the project. Section 7 Consultation under the Endangered Species Act is complete. The January 7, 2025, Section 7 Concurrence from USFWS is found in Appendix B.

Impacts to Threatened and Endangered Species

No Action Alternative

Under the No Action Alternative, no project improvements would occur, and current conditions would be perpetuated. This alternative would not result in any additional direct or indirect negative impacts on threatened or endangered species.

Proposed Action Alternative

The December 2024 Biological Assessment determined that the Proposed Action Alternative would have *no effect* on the North American wolverine and the Canada lynx as they are unlikely to occur within the project action area.

It was determined the Proposed Action Alternative *may affect, but is unlikely to adversely affect* yellow-billed cuckoo and grizzly bear. Yellow-billed cuckoo have been documented on the Flathead Indian Reservation, and transient individuals may use the project action area as a stopover between suitable foraging and nesting habitats, including other more densely wooded deciduous riparian areas found elsewhere along Flathead Lake to the north, the Flathead River to the west, and the Jocko River to the south. Grizzly bears could potentially use locations within the project action area as a movement corridor. This means grizzly bears may be present within construction and staging areas during the construction period. The primary effects to yellow-billed cuckoo, if moving through the area, would be temporary noise related impacts during construction. Primary effects to grizzly bears would be temporary noise, human activities, and equipment maneuvering, which may cause grizzlies to avoid moving through the project action area in the short-term. Garbage and food left behind by construction workers could entice bears into the area, increasing the likelihood of human-bear conflicts; however, adherence to conservation measures outlined in Chapter 5 of this EA would be required to prevent/reduce such conflicts. While long-term, permanent impacts to grizzly bears are not anticipated (as it relates to the replacement of the existing diversion and the piping of the canal) enhancing creek banks, wetlands, and adjacent floodplains may improve movement corridor habitat for grizzly bear within the area.

The Proposed Action Alternative *is not likely to jeopardize the continued existence of* the monarch butterfly. Suitable habitat exists within the project action area. Short-term effects to monarchs would likely include temporary effects from construction, including equipment maneuvering and temporary vegetation disturbance. Long-term beneficial impacts to monarchs may be provided through re-establishment of native vegetation in riparian areas. In addition, improvements would not impede movements or increase barriers for migrating butterflies.

The USFWS concurred with the effect determinations for grizzly bear, yellow-billed cuckoo, North American wolverine, Canada lynx, and monarch butterfly on January 7, 2025 (Appendix B).

4.5.4 Vegetation

Vegetation types within the project action area consist of upland, riparian, and wetland communities. Distinct upland vegetation is found at higher elevations within the project action area, away from Crow Creek or irrigation facilities. Smooth brome (*Bromus inermis*), common teasel (*Dipsacus fullonum*), whitetop (*Lepidium draba*), Canada thistle (*Cirsium arvense*), common burdock (Arctium minus), and other invasive weeds dominate upland areas. Black cottonwood (Populus balsamifera) and speckled alder (*Alnus incana*) are prominent within the transitional riparian zone and scrub-shrub wetland areas. Dominant herbaceous hydrophytic vegetation found in wetland areas and includes yellowflag iris (*Iris pseudacorus*), reed canarygrass, common beaked sedge (*Carex utriculata*), and hairy willowherb (*Epilobium ciliatum*). Other shrub-scrub hydrophytic vegetation includes red-osier dogwood (*Cornus sericea*).

Impacts to General Vegetation

No Action Alternative

The No Action Alternative would not result in ground disturbance and removal of vegetation within the project action area, as no improvements would take place. However, some vegetation may continue to be maintained at the Crow Pump Diversion as part of existing operations and maintenance. Invasive

weeds, including reed canarygrass and Canada thistle, would persist and continue to dominate large portions of the wetland and upland areas within the project limits. Therefore, the No Action Alternative would have minor direct and indirect adverse impacts on vegetation, particularly native vegetation.

Proposed Action Alternative

Under the Proposed Action Alternative, approximately 4 acres of excavation, 5.5 acres of grading, and 17.5 acres of general ground disturbance for staging/stockpiling, construction equipment maneuvering, and access would occur during proposed diversion and canal improvements and wetland/floodplain restoration efforts. This would involve temporary or permanent impacts to wetland habitat, upland habitat, and aquatic (creek) habitat.

Restoration and enhancement improvements would include floodplain shaping to remove invasive reed canarygrass and enhance existing wetland near the diversion and reactivating historic oxbows in the downstream mitigation area to enhance and expand existing wetland. It is estimated that approximately 3.2 acres of wetlands would be gained from the downstream restoration efforts.

While some wetland and riparian vegetation would be lost as a result of the Proposed Action Alternative, those losses would be fully offset within the project action area. The intent of the restoration improvements at the diversion area is to enhance existing wetlands and their functions, provide floodplain enhancement that supports natural floodplain processes, improve bank stability through vegetation efforts, and improve overall habitat quality through the removal of noxious and invasive plant species.

To limit the extent of potential impacts to vegetation, work would be confined to the defined construction limits to the extent practicable, with designated vegetation preservation areas indicated on plan sheets. Temporarily disturbed areas would be seeded following construction using a desirable seed mix approved by CSKT. Vegetation is anticipated to return after completion of the project, and the project action area would continue to be monitored for 12 months following the completion of the Proposed Action Alternative to ensure vegetation is reestablishing. Indirect impacts to vegetation would not be anticipated.

Pre and post construction weed control in the form of chemical, physical, mechanical, and biological treatments would be employed, as needed. The Proposed Action Alternative would include a spring and fall chemical weed treatment before breaking ground at the various project sites to help control the spread of invasive species during construction. Weed control would be commensurate to common CSKT Natural Resource Department actions elsewhere on the landscape across the Flathead Indian Reservation. Post-construction weed control efforts would focus primarily on supporting the establishment of native species within revegetation treatments and changing the hydrology, such that the need for chemical and labor-intensive methods diminishes over time. Other forms of weed control would be considered if monitoring indicates it may be required. It is assumed that multiple years of weed treatments would be required at the project action area. Table 4 provides a list of approved herbicides on the Flathead Indian Reservation.

Table 4. Approved herbicides for use on the Flathead Indian Reservation[1].

Active Ingredient	Example Registered Trade Names[2]	Target Species
CHEMICAL PRODUCTS APPROVED FOR USE ON TRIBAL LANDS:		
2,4-D amine	various	broadleaf
2,4-D ester	various	broadleaf
Picloram	Tordon 22K	perennial broadleaf, vines, woody
Dicamba	Banvel	annual/perennial broadleaf, woody
Glyphosate (aquatic label)	Rodeo, Aquaneat	non-selective
Glyphosate	Roundup, Accord	non-selective
Clopyralid	Transline, Reclaim	annual/perennial broadleaf
Metsulfuron	Escort	annual/perennial broadleaf, woody
Clopyralid + 2,4-D	Curtail	broadleaf
MCPA amine	various	broadleaf
Imazapic	Plateau	annual/perennial broadleaf and grasses
Chlorsulfuron	Telar	annual/perennial broadleaf
Triclopyr	Remedy, Garlon	broadleaf, woody
Triclopyr + Clorpyralid	Redeem	annual/perennial broadleaf
Aminopyralid	Milestone	broadleaf

Overall, the Proposed Action Alternative would have moderate, long-term beneficial impacts on vegetation in the project action area by removing noxious and invasive plant species, increasing species diversity, addressing habitat degradation related to previous land uses, and restoring a more diverse vegetative structure along Crow Creek.

4.6 CULTURAL RESOURCES – DETAILED ANALYSIS

Cultural resources are structures, properties, sites, or objects that reflect the heritage of local communities, tribes, states, and nations. These sites can be historic (over 50 years old) or prehistoric (dating from before European contact with indigenous American cultures), and they are considered important according to criteria established by the National Historic Preservation Act (NHPA) of 1966, as amended and subsequent regulations. Section 106 of the NHPA requires federal agencies to consider the potential effects of their undertakings on cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

[1] All herbicide use shall comply with the CSKT Integrated Weed Management Plan and Proposed Noxious Weed Treatments – Environmental Assessments (2005, 2006, 2007 updates) and shall be approved by the CSKT representative.

[2] The naming of specific products under this column does not constitute an endorsement of these products by CSKT; rather, these products serve as examples of herbicides that include the chemicals approved for use on the Flathead Indian Reservation.

To determine if cultural resources may be present within the identified project action area (or area of potential effect [APE]), the CSKT TPD conducted a cultural review and field survey and provided a letter of findings on December 3, 2024. As part of the cultural review, the TPD accessed the CSKT Cultural Resources Database for previously recorded archaeological sites in the APE. No previously recorded cultural or historic resources have been recorded within the APE; however, one potential area of cultural significance was identified within the vicinity of the project. CSKT TPD staff completed a field reconnaissance of the APE. No artifacts or cultural resources were identified during the field investigation (TPD, 2024).

Impacts to Cultural and Historic Properties

No Action Alternative

The No Action Alternative would not impact cultural or historic properties as no improvements would occur.

Proposed Action Alternative

The Proposed Action Alternative would require vegetation clearing, grading, and excavation to implement the proposed improvements. While no known cultural or historic properties were identified as part of the 2024 cultural review, there are known resources in the surrounding areas. The CSKT TPD has requested that a TPD cultural resource monitor be present during all ground-disturbing activities. Any archaeological or historical artifacts, human remains, or funerary/sacred objects discovered during construction would be left intact and undisturbed, all work in the area would cease immediately, and the CSKT TPD (406.675.2700 ext. 1075) would be notified immediately pursuant to 36 CFR 800.13. Commencement of operations would be allowed upon notification by the CSKT TBD. With these mitigation measures in place, no cultural or historic properties would be affected under the Proposed Action Alternative (TPD consultation found in Appendix C).

4.7 EMPLOYMENT AND INCOME – DETAILED ANALYSIS

The Flathead Indian Reservation is located north of Interstate 90 between Missoula and Kalispell and comprises over 1.2 million acres. The Reservation is located within the Northern Rockies of northwest Montana. Crow Creek extends through the central portion of the Reservation. Agriculture is a locally important source of Tribal income but makes up less than 10% of the economy of the Flathead Indian Reservation (Governor's Office of Indian Affairs, 2020). According to the USCB, the Flathead Indian Reservation population in 2023 was approximately 31,728 (± 459).

The civilian-employed population over 16 years of age was estimated at 13,860, with the unemployment rate at 7%. More people were employed by educational services, health care, and social assistance (25.7%) and retail trade (12.1%) than any other industry sector. The 2023 per capita income was $31,232 (± $1,789) and the 2023 median household income was $72,995 (± $5,262) (USCB, 2023c).

Impacts to Employment and Income

No Action Alternative

The No Action Alternative would not provide temporary jobs or income for the CSKT Tribal community. The No Action Alternative would also not support the distribution of irrigation water when Post Creek flow restrictions and the Kicking Horse Reservoir project go into effect. This would limit the FIIP's ability to adequately provide reliable water to farms and grazing lands and may increase the stress on water management within the Charlo Irrigation Service Area. Therefore, the No Action Alternative would have potential minor, short-term and long-term, direct and indirect adverse impacts on employment and income on the Reservation.

Proposed Action Alternative

The Proposed Action Alternative would have moderate, short-term and long-term, beneficial effects on the local economy and income. This alternative would result in a small number of temporary, year-round job opportunities for residents as part of the labor force necessary to complete the proposed improvements, particularly if the CSKT self-perform any project tasks. These job opportunities would be available through project completion (1.5 years from construction start date). In addition, construction bid documents may be separated into a smaller bid package for work on the gravity pipeline and a larger bid package for the remainder of the proposed work. This separation would allow a smaller tribal contractor the opportunity to construct the gravity pipeline, if able. Tribal contractors would also be given preference over non-tribal contractors. However, if non-local contractors' complete construction, the potential creation of local jobs may be negligible. Non-local employees of the construction contractor(s) would likely spend money in the communities of Charlo, Ronan, and St. Ignatius for items such as lodging, meals, and light construction supplies and materials, contributing to the local economic base over the short-term. Temporary employment opportunities for Tribal members would be prescribed and coordinated through the Tribal Employment Rights Ordinance office.

In the long term, replacing the Crow Pump Diversion and piping the canal to address operational constraints and hydraulic inefficiencies would allow for more reliable supply and distribution of irrigation water to users within the Charlo Irrigation Service Area. Reliable water would provide a means to sustain the area's farms and grazing lands.

4.7.1 Community Infrastructure (Utilities and Public Infrastructure)

Major utilities are available on the Flathead Indian Reservation, including electricity, gas, and communication lines. Existing utilities within the project action area include overhead electric (Mission Valley Power), an existing stream gage, and agricultural water delivery (Crow Pump Canal and Post A Canal). The only major roadway near the project action area is MT-212 (one mile to the south). An unpaved road (Piedalue Road) used to access the Crow Pump Diversion and Johnson Road are located within the project action area. The MRL railroad, and associated ROW, are also located adjacent to the project action area. Approximately two miles east of the project action area is the US-93 roadway corridor.

Impacts to Utilities

No Action Alternative

The No Action Alternative would have no direct or indirect impacts on utilities, as construction would not take place.

Proposed Action Alternative

Under the Proposed Action Alternative, a beneficial, permanent impact on irrigation water delivery is anticipated by providing structural modifications that improve the operation, reliability, and water distribution of the system.

Some short-term disruptions to electrical service may be anticipated during installation of the new transformer and connection of the new underground electrical line to the existing electrical grid. Any notification of service interruptions would be the responsibility of the appropriate utility owners. Therefore, the Proposed Action Alternative would have a negligible, short-term, direct impact on utilities. No indirect impacts would be anticipated.

Impacts to Transportation Network

No Action Alternative

No direct or indirect impacts would occur to the transportation network under the No Action Alternative.

Proposed Action Alternative

The Proposed Action Alternative may affect local transportation. Depending on where materials and construction equipment are coming from, traffic on MT-212 and/or US-93 may be temporarily slowed down as materials and heavy equipment are transported to the project action area. These impacts are anticipated to be short-term and minor.

During construction, the existing access road to the diversion and pumphouse would be impacted by construction vehicles and equipment. Dust abatement measures (e.g., water) may be used to control dust during implementation of the Proposed Action Alternative. Following construction, the existing gravel access road would be permanently improved through re-grading and new gravel placement to allow future maintenance of the diversion infrastructure. No indirect impacts to the transportation network are anticipated.

4.8 RESOURCE USE PATTERNS – DETAILED ANALYSIS

4.8.1 Agriculture

The Farmland Protection Policy Act (FPPA) of 1981 was passed by Congress to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purposes of assessing projects under the FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for agriculture. It can be forest land, pastureland, cropland, or other land. However, projects that occur on farmland already in urban development, or committed to urban development, or used for water storage are not subject to FPPA (NRCS 2023). A review of the NRCS Web Soil Survey for Lake County indicates approximately 74.1 acres within the project action area are designated as farmland of local importance or prime farmland if irrigated. These acres are primarily in the vicinity of the existing access road to the Crow Pump Diversion and the farmland north of Crow Creek. The lands adjacent to the creek, however, are not designated as prime or unique. Land uses within the project action area include agricultural production and livestock grazing, which is supported by the Crow Pump Diversion and Canal.

The Charlo Irrigation Service Area constitutes roughly 24,000 acres of active irrigation. Irrigation service to the Charlo area is management in conjunction with roughly 6,000 additional acres in the Moiese area, for a composite total of about 31,000 acres of active project irrigation (DOWL, 2023).

Impacts to Agriculture

No Action Alternative

Under the No Action Alternative, there would not be any physical impacts to agricultural land, as no disturbance would occur. However, operational limitations associated with the Crow Pump Diversion and Canal would persist, and water allocation requirements may not be met when the fall 2026 minimum instream flows are enforced on Post Creek and the outlet works project at Kicking Horse Dam begins. Therefore, the No Action Alternative would have minor, long-term adverse impacts to agricultural production.

Proposed Action Alternative

Minor, long-term beneficial impacts to agricultural lands and operations in the Charlo Irrigation Service Area are anticipated under the Proposed Action Alternative. While no agricultural land would be permanently impacted within the project action area, some grazing area may be reduced through fencing adjustments near the creek to protect the downstream wetland mitigation/restoration site. Improvements to the Crow Pump Diversion and piping of the canal would eliminate existing operational and capacity limitations, providing the supplemental irrigation water the Charlo Irrigation Service Area would require when minimum instream flows on Post Creek are enforced. The Proposed Action Alternative would create a reliable and redundant irrigation system, which would provide increased water supply and a flexible means to sustain the area's farms and grazing lands.

4.9 OTHER VALUES – DETAILED ANALYSIS

4.9.1 Visual Resources

The existing visual character surrounding the project action area includes views of the broad Mission Valley with the Mission Mountains to the east and the Moiese Hills to the west. Dominant visual features within the project action area include the meandering Crow Creek and its riparian corridor, the Crow Pump Diversion structure and the Crow Pump Canal, agricultural lands, and the MRL railroad to the east of the project action area.

Impacts to Visual Resources

No Action Alternative

The No Action Alternative would have no direct or direct impacts on visual resources, as no improvements would take place and existing conditions would be perpetuated.

Proposed Action Alternative

The visual character of the project action area, primarily near the Crow Pump Diversion structure, would be slightly altered by replacing the existing diversion, replacing the existing pumphouse, piping and burying the Crow Pump Canal, and removing/replanting the large area of reed canarygrass adjacent to the creek through restoration/revegetation efforts, which may take one or two growing seasons to reestablish. These improvements would be visually evident to individuals that visit the area. However, individuals familiar with the site would recognize these improvements as typical within the context of the FIIP and the existing visual character of the area. Therefore, the Proposed Action Alternative would have long-term, minor, beneficial and adverse impacts to the project action area's visual character.

4.9.2 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the U.S. Government for Indian tribes or individuals. Assets can be real property (e.g., Tribal lands), physical assets, or intangible property rights. ITAs cannot be sold, leased, or otherwise encumbered without the approval of the U.S. Government. A trust relationship is established through a congressional act or Executive Order, as well as by provisions identified in historic treaties. As trustee, the DOI is legally required to fulfill treaty and statutory obligations and to manage, protect, and conserve Indian trust resources and lands.

Lands associated with a reservation, ranch, or public domain allotment are examples of an ITA. Resources located within reservations, including timber, minerals, and oil and gas, are also considered trust assets. Treaty rights and water rights, as well as hunting and fishing rights, may also be ITAs. Additional assets consist of financial assets in trust accounts. The Crow Pump Diversion, Crow Pump Canal, and the resources/ Tribal land within the project action area are considered ITAs.

Impacts to Indian Trusts

No Action Alternative

Under the No Action Alternative, improvements at the Crow Pump Diversion and Crow Pump Canal, which are considered ITAs, would not be made. The BIA, through the FIIP, would still be entitled to divert flows from Crow Creek via the diversion; however, the current facility is not operable, and the Crow Pump Diversion and pump station have capacity, flexibility, and redundancy limitations, which greatly impact the reliability of water delivery in the area. Overall, the No Action Alternative could have long-term adverse effects on ITAs associated with FIIP, and existing limitations and inefficiencies would be perpetuated.

Proposed Action Alternative

The Proposed Action Alternative includes replacing the existing Crow Pump Diversion and pumphouse, placing the Crow Pump Canal within a pipeline, and restoration activities. These improvements would have a moderate, long-term beneficial impact on ITAs and the adjacent Tribal trust lands by improving operational inefficiencies and capacity limitations, providing water delivery redundancy to the Charlo Irrigation Service Area, and enhancing the land through habitat restoration.

4.9.3 Waste and Hazardous Materials Management

The MDEQ database shows no hazardous materials sites within the project action area. The closest site identified in regulatory records is a gas station located approximately 3.8 miles east of the project action area (MDEQ, 2024).

An asbestos and lead-based paint inspection was performed at the Crow Pump Diversion on July 17, 2024. Material samples and paint chips were taken at the diversion structure, pump house, and at pipes within the pump house area. None of the samples taken tested positive for asbestos. One of the samples tested positive for lead-based paint. The paint is located on an orange valve within the pump house (Abatement Contractors of Montana, 2024).

Impacts to Waste and Hazardous Materials Management

No Action Alternative

The No Action Alternative would perpetuate existing conditions. No direct or indirect impacts on waste and hazardous materials management are anticipated.

Proposed Action Alternative

Under the Proposed Action Alternative, some hazardous materials, such as oil and gas, would be used by equipment near wetlands and waterways during construction. These would be limited quantities and managed according to standard best practices. Such practices typically include checking equipment for leaks, proper disposal of hazardous materials, and prompt cleanup of any spills. While not anticipated, if a hazardous substance is released or spilled into the environment in an amount that equals or exceeds established reportable quantities, as noted in 40 CFR 302.4, the contractor would be required to notify regulators, including CSKT Environmental Protection, CSKT Disaster Emergency Services, and the National Response Center, if applicable.

Lead-based paint was noted on the orange valve within the existing pumphouse. During demolition, the valve would be removed and disposed of at an EPA approved disposal facility.

Overall, impacts related to waste and hazardous materials management would be short-term and negligible.

4.10 CUMULATIVE EFFECTS

Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action. The cumulative effects of an action may be undetectable when viewed in the individual context of direct and indirect actions but could add to a measurable environmental change.

Guidance for implementing NEPA requires that federal agencies identify the temporal and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. The spatial limits of the cumulative analysis are typically broader than the analysis of the proposed action because the cumulative analysis must consider all activities that affect identified environmental components, even outside the area affected by the proposed action. The temporal boundaries of the cumulative analysis often extend beyond the period of time considered in the analysis of the proposed action alone. This is because the cumulative analysis must also take into account activities that occurred before the proposed action is initiated as well as after the proposed action is completed, if those activities affect (or could affect) one or more of the same resources affected by the proposed action.

Unless otherwise stated, the temporal boundary of analysis is from approximately the construction date of the Crow Pump Diversion and Crow Pump Canal (early to mid-1900s) to the year 2030. This temporal boundary encompasses a range within which data are reasonably available, and forecasts can be reasonably made. The geographic boundaries of analyses vary depending on the resource and potential effects but are generally considered to be the project vicinity shown for the Crow Pump Diversion Reconstruction project and locations upstream and downstream on Crow Creek where implemented projects may influence conditions within the project action area. The at-risk resources identified in the project action area are wetlands, surface waters, water rights, aquatic species, threatened and endangered species, and vegetation.

Table 5 lists the past, present, or reasonably foreseeable actions considered for analysis of cumulative impacts for identified resources. The actions or projects were selected because they are within the project vicinity or could influence conditions within the project action area.

Table 5. Cumulative Impacts Analysis – Projects Considered

Action	General Description	Status
Farming and Railroad	Previous land management practices including irrigation, farming, and grazing activities have resulted in substantial changes to habitat communities within the area, changes in topography, noxious weed establishment, and aquatic species movement.	Past

Action	General Description	Status
CSKT Tribal Broadband Infrastructure Project	The CSKT was awarded a grant under the Tribal Broadband Connectivity Program from the U.S. Department of Commerce, National Telecommunications and Information Administration for a project to expand access to broadband service on Tribal land. The proposed project consists of the installation of a fiber optic ring, physically circling the floor of the Mission Valley and adjoining valleys, as well as lateral fiber spurs directly connecting all tribal anchor institutions, many businesses, and communities. The project includes 200+ miles of fiber optic construction, a network operations center, and a 180-foot cell tower. Fiber optic installation will occur along US-93 within the project vicinity.	Current Construction to be completed by December 2026
Kicking Horse Dam Outlet Works Project	Safety upgrades to address the aging infrastructure to current industry standards, including hydrology, hydraulics, structural, mechanical, geotechnical, and seismic.	Future Construction to begin in 2026
Montana Department of Transportation US-93 Ninepipe Roadway Project	Project includes three segments: US-93 North Ninepipe, US-93 Wildlife Overpass, and SF 179 Eagle Pass Trail Safety. The proposed project will reconstruct 3.7 miles of US-93 from south of Eagle Pass Trail to Brook Lane in the Ninepipe area on the Flathead Indian Reservation. Three new bridges, a wildlife overpass, shared-use path, and wildlife fencing are also included.	Future Construction to begin in 2027

Direct and indirect impacts associated with replacing the existing Crow Pump Diversion, placing the existing Crow Pump Canal within a pipeline, floodplain restoration, bank stabilization, and other aquatic restoration efforts would contribute to past effects on wetlands, surface waters, water rights, aquatic species, threatened and endangered species, and vegetation within the project action area. This impact contribution would potentially undo the negative impacts created from previous projects and land management (i.e., current FIIP infrastructure and past crop production and grazing activities) through removal of fish barriers, improved irrigation water distribution, and floodplain and habitat enhancement/restoration.

Other past, present, and reasonably foreseeable future projects that have or would likely have adverse or beneficial cumulative impacts on wetlands, surface waters, water rights, aquatic species, threatened and endangered species, and vegetation in the vicinity of the project are listed in Table 5. Many of these projects have resulted in or would potentially result in some net losses of vegetation, wetlands, and wildlife habitat; however, it is likely that such losses on current or proposed projects would be mitigated to some degree by federal and Tribal requirements.

When considering the larger ecosystem, the Proposed Action Alternative would likely result in minor, beneficial cumulative impacts on wetlands, surface waters, water rights, aquatic resources, threatened and endangered species, and vegetation when considered along with other past, present, and reasonably foreseeable future actions.

5.0 MITIGATION MEASURES

The following mitigation measures are required to avoid or reduce adverse impacts under the Proposed Action Alternative, if it is selected.

Aquatic/Fish Mitigation Measures

- Complete cofferdam installation and channel rerouting during low flow periods (July through September) when erosion potential is the lowest and outside egg incubation and larval emergence periods for spring and autumn spawning salmonids.
- Conduct fish rescues during channel (existing channel and bypass) dewatering events. The CSKT Fisheries Program will conduct the fish salvage operations and will be notified five working days in advance of channel dewatering events.
- Continue noxious weed management until disturbed areas are revegetated and stabilized.
- Designate staging areas at a minimum of 150 feet from any stream channel.
- Dewatering activities must deposit sediment laden water in an upland location or location with adequate vegetative buffer to prevent sediments from reaching a waterway.
- All equipment or personal gear (e.g., waders, boots) used in or near water will be inspected and decontaminated prior to arrival on the work site to prevent introducing terrestrial or aquatic invasive species.
- In-channel work (below ordinary high-water mark) would be completed to the maximum extent practicable in dry conditions, except for installation and removal of the temporary cofferdams at the project site.
- Install appropriate BMPs to minimize transport of sediment and sediment-laden runoff to a waterway during pre-construction activities, construction activities, and post construction activities. All BMPs shall be monitored and maintained for effectiveness to ensure they minimize sediment delivery to waterways.
- Monitor for turbidity during the duration of active in-water work. This includes turbidity collection upstream of the cofferdams to establish a baseline and collection downstream of the active work area to identify any change in turbidity levels. Should the change be notable, implement corrective actions to address potential sediment sources or ineffective BMPs.
- Remove all temporary BMPs post-construction once the site is stable and/or rehabilitated/revegetated.
- Leaving, when feasible, any woody debris within the ordinary high-water mark to keep it within the system.
- Limit heavy equipment access to creek channel, reduce impacts to the extent possible to the creekbank during construction.
- Keep heavy equipment and machinery used on site and near waterway clean and well-maintained. Any repair work would be completed 150 feet away from a waterbody or aquatic feature with measures in place to prevent contaminates from reaching a waterway or wetland.
- Perform visual checks daily on vehicles, equipment, and heavy machinery to minimize the chances of introduction of petroleum products to waterways. External grease and oil shall be removed off vehicles, equipment, and machinery offsite prior to operating in project area.

- Fueling and maintenance of equipment shall be performed off-site, a minimum of 150' from water resources.
- Maintain an oil spill kit in staging areas and have a protocol in place to address a spill (e.g., notification process, spill containment process).
- Notify appropriate regulators, including CSKT Disaster Emergency Services (406.275.2800), CSKT Environmental Protection (406.883.2888), and the National Response Center (800.424.8802), should a spill (oil, gasoline, etc.) that exceeds reportable quantities occur on site.
- Limit tree cutting in the riparian corridor and retain trees and vegetation near the ordinary-high-water mark of the creek, where feasible.
- Minimize creek crossings by motorized vehicles to that which is necessary to complete the work. This would minimize potential increase in sediment mobilization in the creek channel and minimize potential for short-term increases in turbidity. Designate area for vehicle/equipment crossing, if necessary, that minimizes impact to aquatic habitat.
- Remove all excavated non-native material off-site and dispose of in appropriate upland location and/or approved landfill.
- Use clean rock material for riprap construction.
- Wash equipment prior to mobilizing to work site to minimize the chances for new weed introduction or sediment into the waterway.
- Establish a cement truck clean out station to properly contain wet concrete and wash water.

Wildlife Mitigation Measures

- Anyone working in grizzly bear habitat (i.e., contractors, partners, and tribal employees) will be briefed on bear-country safety, including use of bear spray and measures to avoid providing attractants and minimizing potential for conflicts and disturbance to bears.
- All workers will be equipped with and carry bear spray.
- Promptly clean up any project related spills, litter, garbage, debris, etc.
- Store all food, food related items, petroleum products, antifreeze, garbage, and personal hygiene products inside a closed, hard-sided vehicle or commercially manufactured IGBC Certified bear resistant container.
- Remove garbage from project sites daily and dispose of it in accordance with applicable regulations. Anyone working in grizzly bear habitat (i.e., contractors, partners, and Tribal employees) will comply with applicable attractant storage orders (https://igbconline.org/be-bear-aware/food-storage/). If no specific rule exists for the area, a review and adaptation of the available food storage orders will be considered adequate.
- Activities will adhere to all grizzly bear-related requirements in Tribal Forest Management Plans and Resource Management Plans, Terms and Conditions in past and future consultations, and other management plans. This includes consistency with any Forest-specific bear safety plans.
- Between April 1 and June 1, all activities will avoid high-quality spring habitats wherever feasible. If it is not feasible to avoid these areas, projects in quality spring habitats during the spring season will be completed in 5 or fewer days. These areas are defined as snow-free forested and open habitats that afford fresh green-up of grasses, roots, and bulbs, as well as foraging opportunities for small rodents, and may include riparian areas, meadows, open grassy parklands, and avalanche chutes.

- No new openings would be created in riparian management zones where the distance to cover would exceed 350 feet.
- The project cannot contribute to motorized access conditions that result in potentially significant effects to grizzly bears. In areas where existing motorized access conditions may affect grizzly bears, motorized use will only occur during daylight hours, and no motorized access for project activities will occur further than 300 feet from any open road.
- The project cannot include actions that result in a net increase in the amount of motorized or non-motorized access routes or route density and/or a net decrease in the amount of core or secure habitat, as assessed by a wildlife biologist.
- Any motorized access (on bermed roads or cross country) that is further than 500 meters from any open or gated road will need to be reviewed and approved by a wildlife biologist. Such access will be consistent with all plan-level direction and Section 7 Terms and Conditions.
- No seeding or planting of species palatable for grizzly bears (i.e., clovers) will occur. Projects that involve seeding or planting of grasses, forbs, or shrubs must do so in a manner that will tend not to attract bears into areas where increased mortality risk or interaction between bears and people is likely, such as adjacent to roads or in or near developed or designated recreation and/or camping sites.
- Camping for project-related activities will occur at developed campgrounds or if at dispersed sites, will consist of ≤20 individuals for up to 5 days per campsite.
- Grizzly bear sightings and/or incidents will be reported to the CSKT Wildlife Management office within 48 hours.
- Notify the CSKT Wildlife Management Program of any animal carcasses found in the area.
- Remove garbage from the project site daily and dispose of it in accordance with all applicable regulations.
- Notify the CSKT Wildlife Management Program of any animal carcasses found in the area; CSKT Wildlife Management or CSKT Fish and Game will remove the carcass to remove attractants within the work site.
- Notify the CSKT Wildlife Management Program of any Grizzly Bears observed in the vicinity of the project.
- To reduce potential impacts to wildlife and vegetation, work shall be confined to the proposed construction limits to the extent practicable. This would ensure that ground-disturbing activities are limited, which would reduce the amount of potential dust created, as well as lower potential for noxious weeds or other undesirable plants to establish.
- The contactor shall not cause injury or death to migratory birds, including eggs and nestlings. If trees or shrubs must be removed, tree and shrub removal shall occur before or after the migratory bird breeding season (remove before April 15 or after August 16 of any calendar year), when possible. If vegetation clearing cannot be avoided during the entire nesting season, it should at least be avoided, to the greatest extent practicable, during the peak nesting season (which is May 1 to July 15). Should vegetation clearing need to occur during the breeding season, the contractor shall hire a qualified biologist to survey trees/shrubs for active nests before vegetation removal takes place. If an active nest is discovered, the nest shall be left in place and protected until young hatch and depart.

Ground Disturbance Mitigation Measures

- The contractor shall prepare and submit the NPDES Permit Notice of Intent, SWPPP, and Notice of Termination to the EPA.
- Water shall be applied, as needed, to control dust during all phases of construction.
- BMPs to control erosion from the construction site shall be implemented to prevent sediment from leaving the construction site.
- The contractor shall adhere to all applicable tribal, state, and federal regulations when obtaining construction water.
- Disturbed upland soils would be seeded using species specific to the project vicinity.
- In compliance with Executive Order 13112 regarding noxious weeds, the contractor shall inspect all earth-moving and hauling equipment at the contractor's equipment storage facility, and all equipment shall be washed prior to entering the construction site to prevent the introduction of noxious weed seed.
- In compliance with Executive Order 13112 regarding invasive and noxious weeds, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.

Cultural Mitigation Measures

- A CSKT TPD monitor will be present during all ground disturbance activities to inspect for unexpected archaeological resources that may be uncovered. The contractor shall contact the CSKT TPD two weeks prior to any ground disturbing activities to arrange for TPD staff to be present during this phase of construction.
- Any archaeological or historical artifacts discovered during construction shall be left intact and undisturbed, all work in the area shall cease immediately, and the CSKT TPD (406.675.2700 ext. 1075) shall be notified immediately pursuant to 36 CFR 800.13. Commencement of operations shall be allowed upon notification by the CSKT TPD.
- If during construction operations, any human remains, funerary objects, sacred objects, or objects of cultural patrimony, as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; Stat. 3048; 25 U.S.C. 3001), are discovered, the contractor shall cease operations in the immediate area of discovery, protect the remains and objects, and shall immediately notify the CSKT TPD (406.675.2700 ext. 1075) of the discovery by telephone with written confirmation. The contractor shall continue to protect the immediate area of the discovery until notified by the CSKT Tribal Preservation Department that operations may continue.

5.1 ADAPTIVE MANAGEMENT

The DOI has adopted an operational definition of adaptive management for the purposes of managing operational systems in the context of ecosystem management. Adaptive management is a decision process that promotes flexible decision-making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies and operations as part of an iterative learning process. Adaptive management recognizes the importance of natural variability and emphasizes the idea of learning while doing. It provides resource managers with an active strategy for dealing with the uncertainties that characterize management of large natural ecosystems.

Article IV.G of the CSKT-MT Compact establishes a Compact Implementation Technical Team for planning for and implementation of operational improvements, rehabilitation and betterment, and adaptive management regarding the FIIP. The project-specific actions related to the proposed Crow Pump Diversion Improvements are consistent with the adaptive management strategies included in Appendix 3.5 of the CSKT-MT Compact.

6.0 CONSULTATION AND COORDINATION

6.1 CONSULTATION

The CSKT TPD were consulted during the preparation of this EA, in accordance with Section 106 of the National Historic Preservation Act of 1966. A concurrence letter from TPD was provided on December 3, 2024 (Appendix C). Informal consultation with USFWS under Section 7 of the Endangered Species Act was completed on January 7, 2025 (Appendix B). Coordination with CSKT Water Quality and USACE occurred on January 14 and 16, 2025, respectively. The permitting coordination is ongoing, and Tribal Shoreline Protection Office coordination would occur as part of this ongoing effort.

7.0 LIST OF PREPARERS

The following individuals contributed to the interdisciplinary analysis and/or review of the EA.

DOWL		
Contributor	Title/Office	Role
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Cameron Sapp	Environmental Specialist Helena, MT	Wetlands and biological resources
Jeff Olsson	Senior Water Resources Engineer Helena, MT	Project background, purpose and need, alternatives, impact analysis, and QA/QC
Jack Krusemark	Project Water Resources Engineer Bozeman, MT	Project background, purpose and need, alternatives, impact analysis, and QA/QC
Kevin Johnson	Project Manager Bozeman, MT	Final QA/QC and Statement of No Conflict
Geum Environmental Consulting, Inc.		
Tom Parker	Principal Ecologist Hamilton, MT	Wetland mitigation and restoration design
Alyssa Stephenson	Water Resources Specialist Hamilton, MT	Wetland mitigation and restoration design
CSKT		
Kevin Askan	Acting Tribal Historic Preservation Officer Charlo, MT	Cultural Resources
Amber Swicegood	Tribal Biologist Pablo, MT	Biological Assessment
Tabitha Espinoza	Wetlands Coordinator Pablo, MT	Wetlands, NEPA review, and mitigation alternatives
Seth Makepeace	Hydrologist Pablo, MT	Alternatives analysis and irrigation design
Craig Barfoot	Fisheries Biologist Pablo, MT	NEPA review, alternatives, fisheries
Morgan Schultz	Restoration Ecologist Pablo, MT	Wetland delineation
Taryn Bushey	NEPA Coordinator Pablo, MT	NEPA Review and agency involvement
BIA		
Tobiah Mogavero	BIA Northwest Region NEPA Coordinator Portland, OR	NEPA Review
Shane Hendrickson	BIA Flathead Agency Superintendent Pablo, MT	NEPA Review and FONSI

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Appendix A: Agency Involvement

Crow Pump Diversion Reconstruction DEWR IDT Scoping/Coordination Meeting

Confederated Salish and Kootenai Tribes

August 15, 2024 – MS Teams Meeting

3:00 p.m. to 3:10 p.m. **Introductions**

3:10 p.m. to 4:30 p.m. **General Project Description and Purpose (~30 min.)**

- Existing condition and key limiting factors
- Purpose and Need
- Alternatives development
    - Infrastructure alternatives
    - Enhancement and restoration opportunities
- Summary of the Preferred Action
- Area of potential effect

Potential resource concerns that can be addressed by design changes and/or mitigation (~20 min.)

- Vegetation and wildlife habitat
- Fisheries
- Wetlands
- Water quality
- T&E Species
- Cultural Resources
- Water Resources
- Soil and Topography
- Agriculture
- Floodplain

Expected environmental permits (~5 min.)

- Owner-obtained permits (ALCO 87A, CWA 404, & CWA 404)
- Contractor-obtained permits (NPDES Stormwater)

Schedule for env. actions relative to design & implementation (~5 min.)

- NEPA
- Permitting

Coordinate the environmental compliance schedule for (~15 min.)

- Cultural Coordination (NHPA Section 106 Consultation)
    - Define process – e.g., a Cultural Clearance Letter would require an update due to construction duration
    - Process for SHPO Coordination
- Biological Assessment and ESA Needs (Section 7 Consultation)

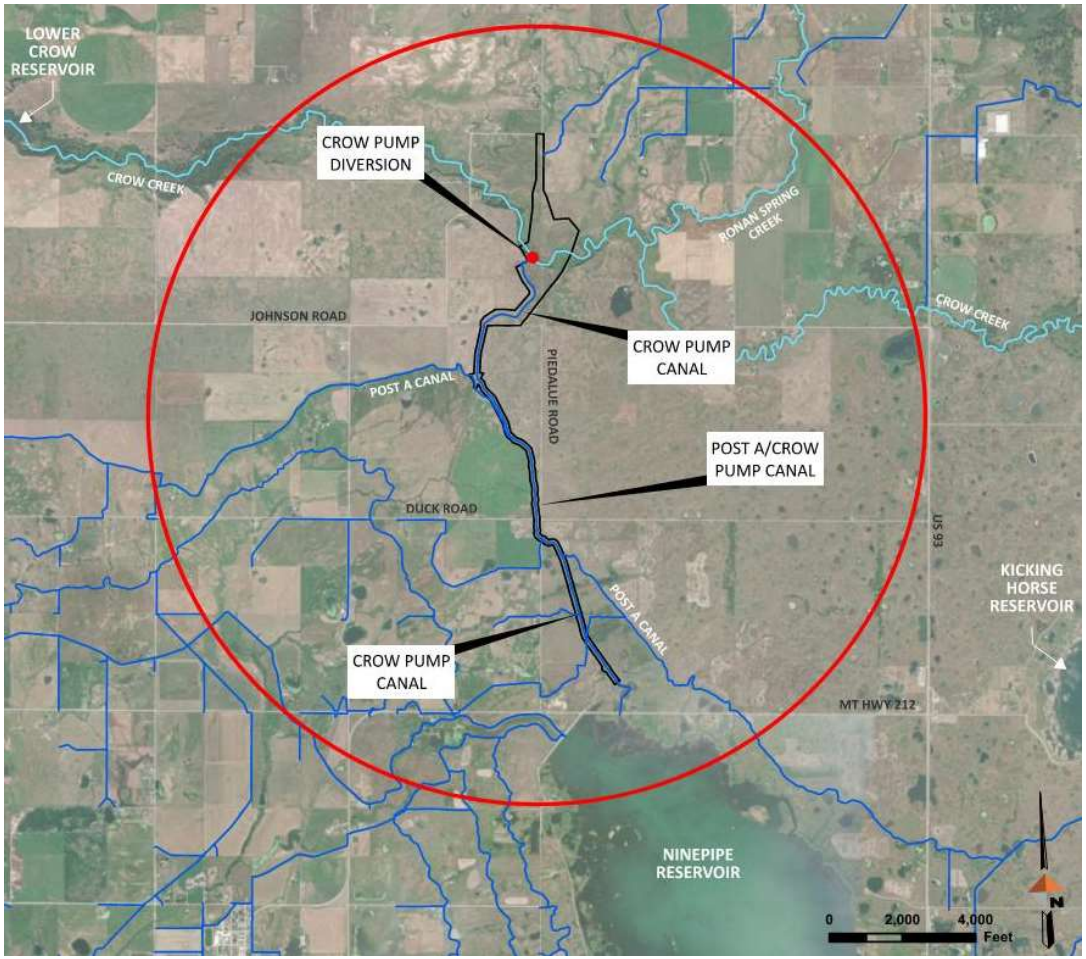
DOWL

DEWR IDT SCOPING & COORDINATION

CROW PUMP DIVERSION RECONSTRUCTION



Project Location & Vicinity



Existing Condition and Key Limiting Factors

- Diversion & Intake
  - No pump redundancy
  - Limited operational window and pump capacity
  - No fish passage or screening
  - Backwater influence
  - Poor hydraulic approach conditions
- Pump Canal
  - Inefficient, overgrown, leaky canal
  - Difficult to access and maintain (no access road)
- Post A Canal
  - Inability to accommodate large fluctuations in pumped inflow
- Riparian Corridor
  - Low-quality habitat near the diversion



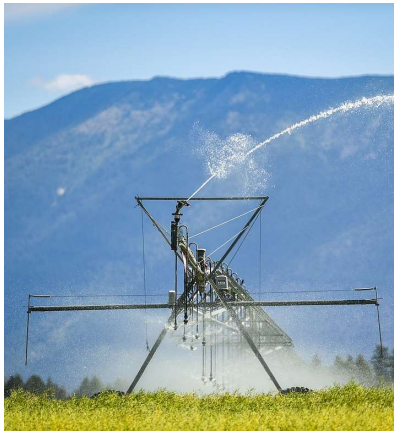




Purpose and Need

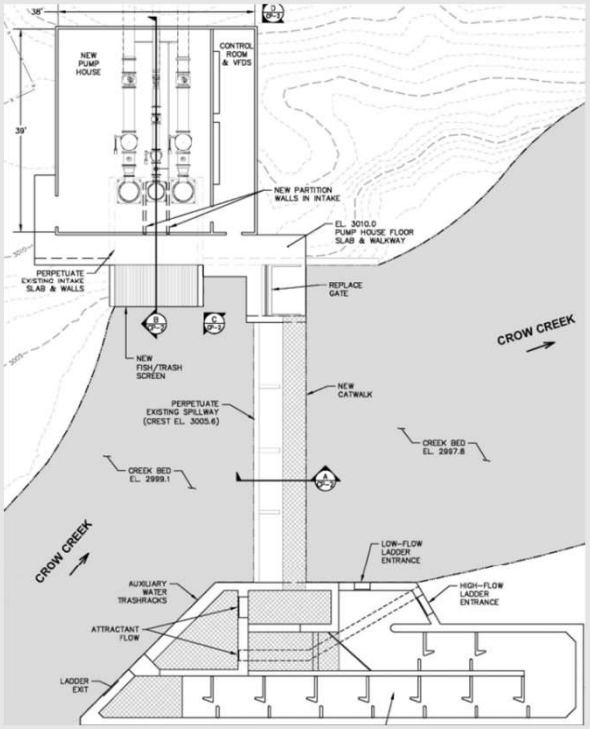
- Restoration
  - Support the Tribe's restoration objectives in both Crow Creek & Post Creek
  - Prepare for MEF/TIFs
  - Fish passage and screening
  - Riparian habitat enhancement
  - Restoration/mitigation (e.g., side channel reconnection)
- Irrigation Improvements
  - More robust and diversified water supply to the Charlo Area
  - Address key limiting factors in the existing system







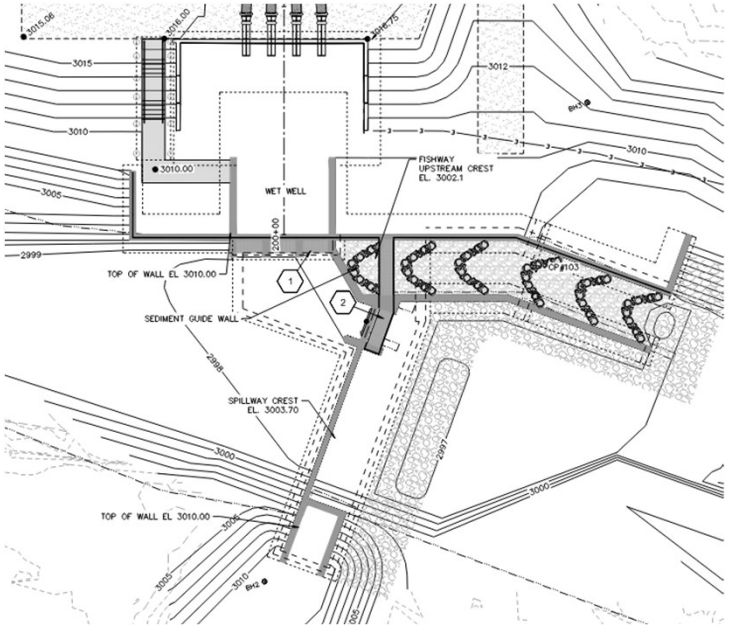
Diversion Alternatives Development



Rehabilitation

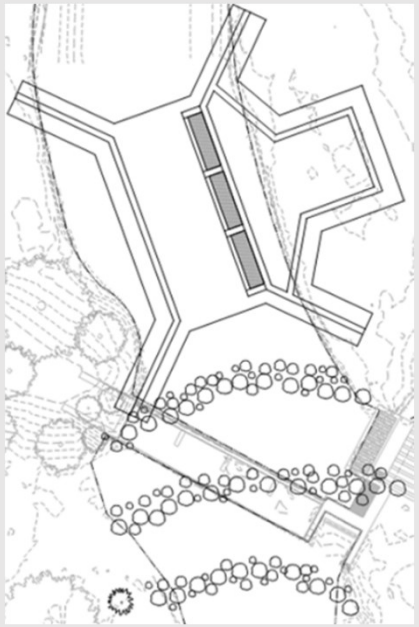
'Structural' Fish Passage

Selected Alternative



Replacement

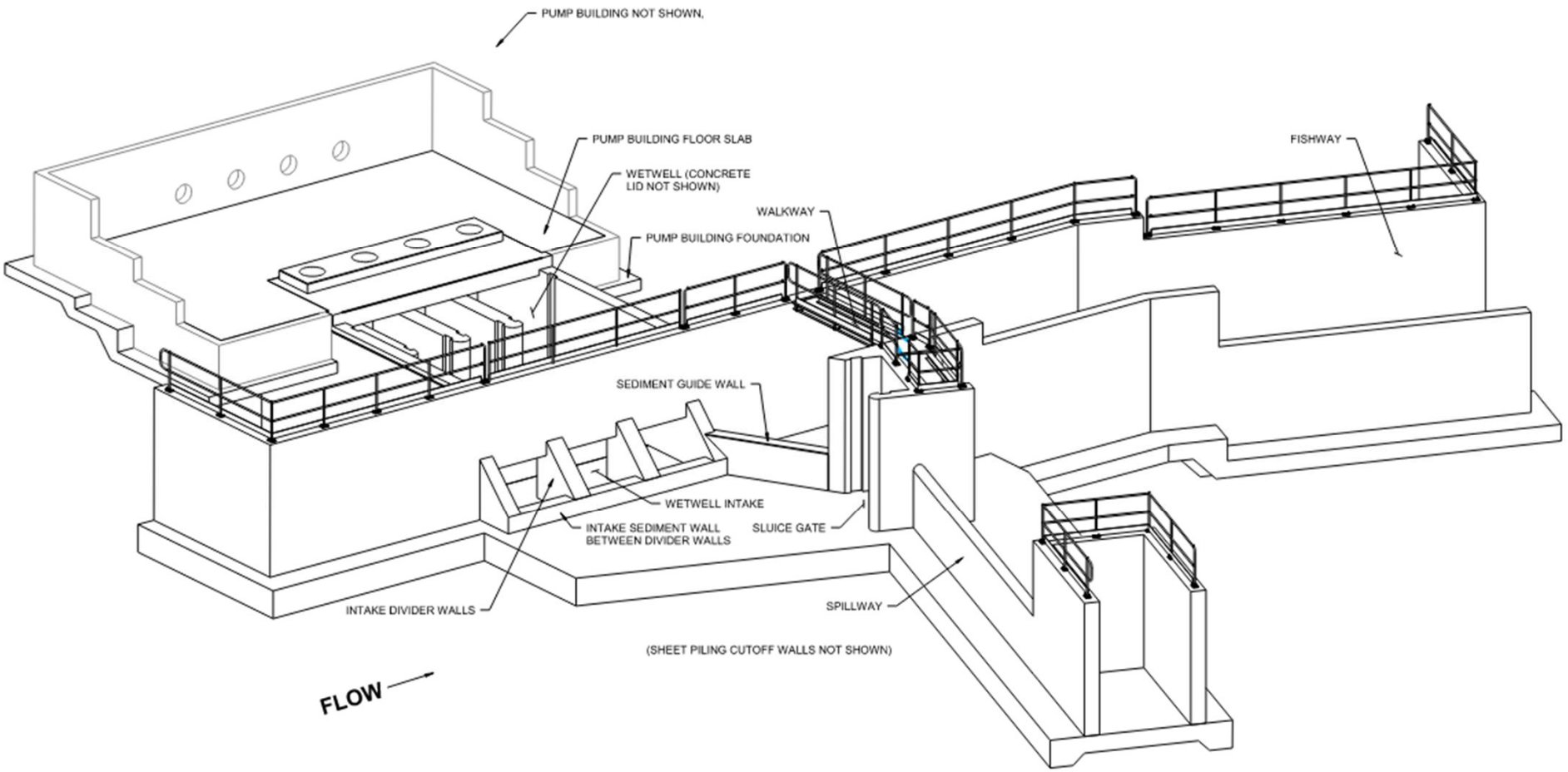
'Nature-Like' Fish Passage



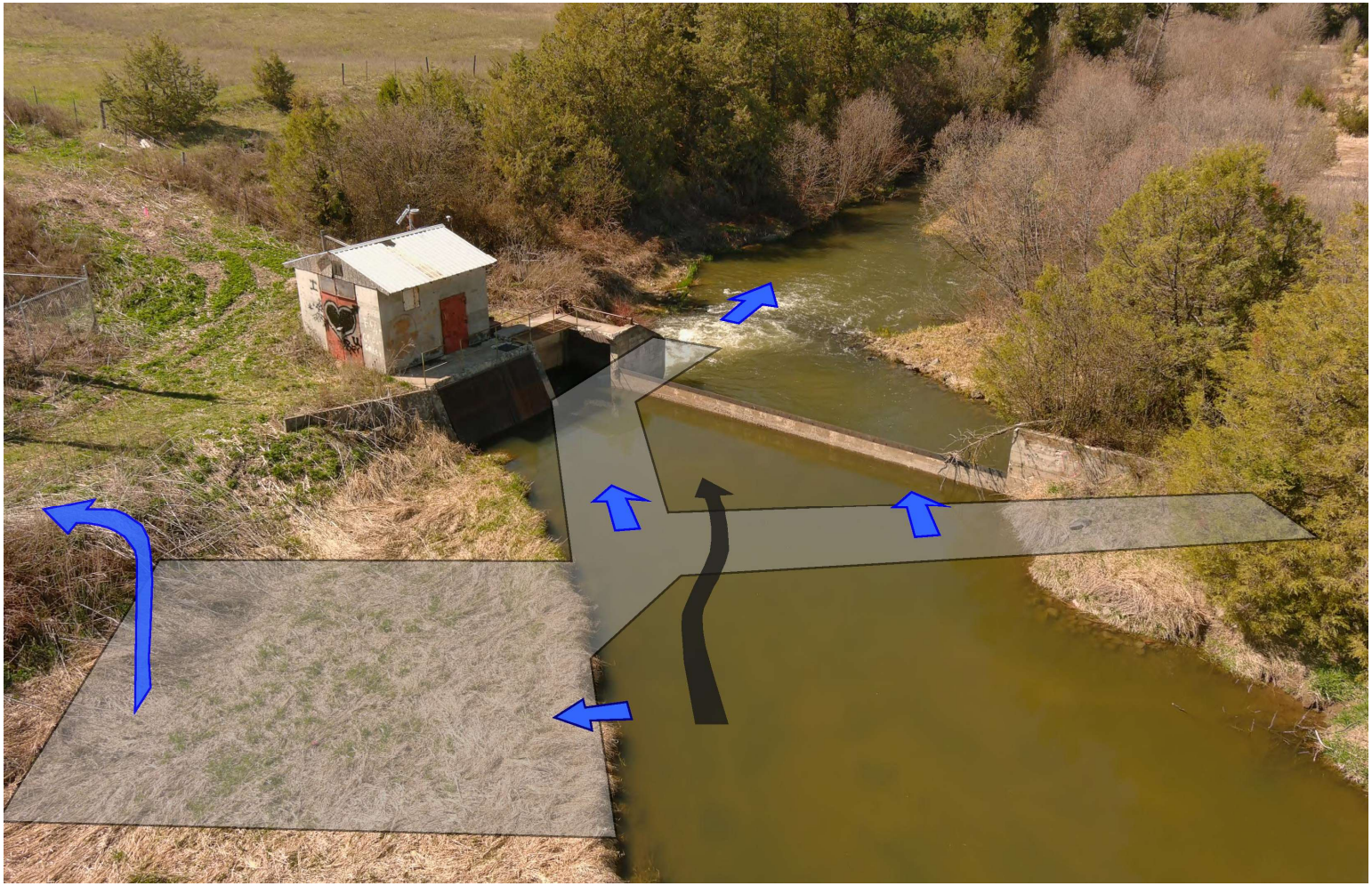
Grade Control & Intake

'Nature-Like' Fish Passage

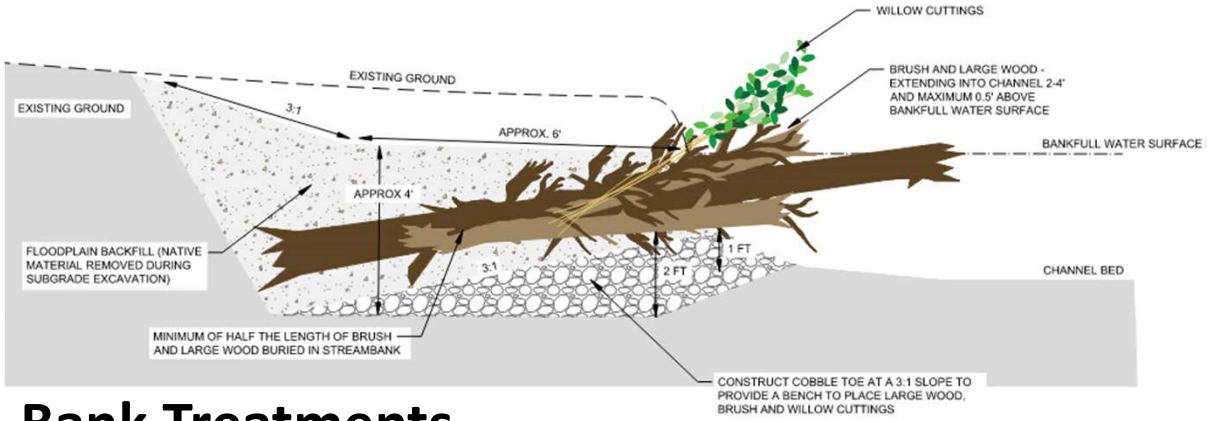
Selected Diversion Alternative



Selected Diversion Alternative



Habitat Enhancement Opportunities



Bank Treatments



Floodplain Surface Treatments

Pump Canal Alternatives Considered

Selected Alternative



Compacted Earth Lining

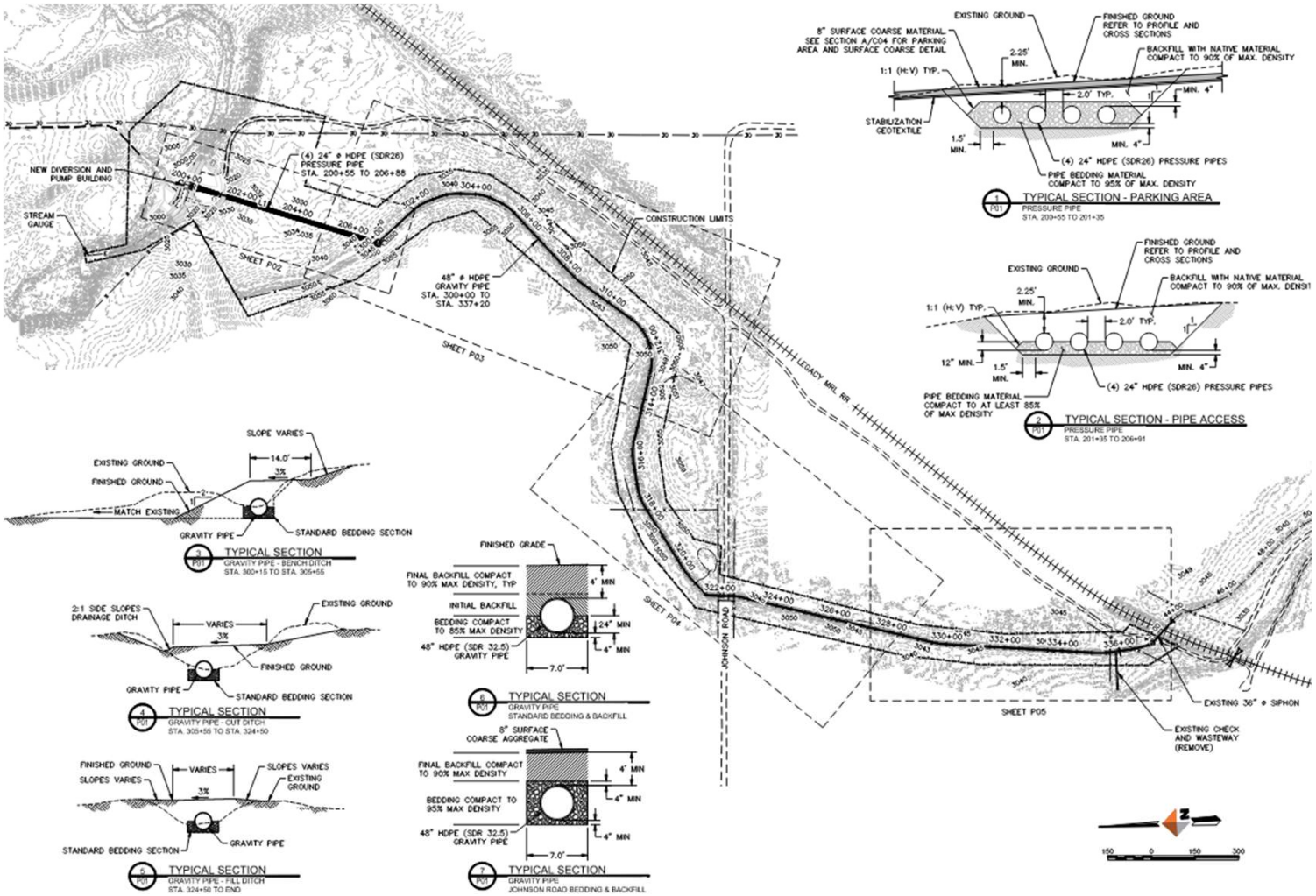


Shotcrete/Geomembrane Lining



Pipeline

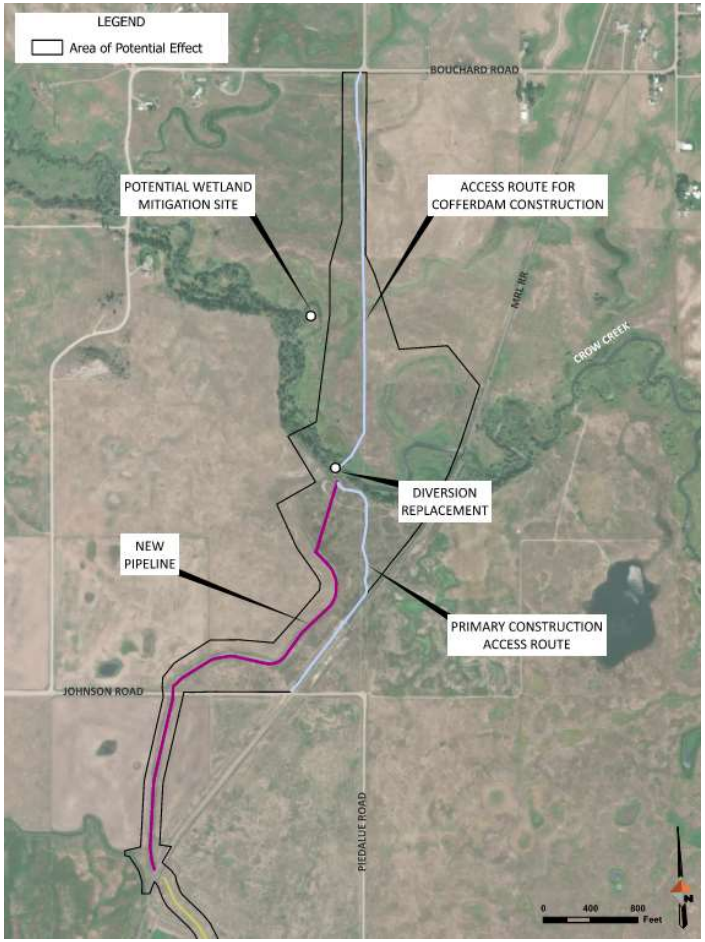
Selected Pump Canal Alternative

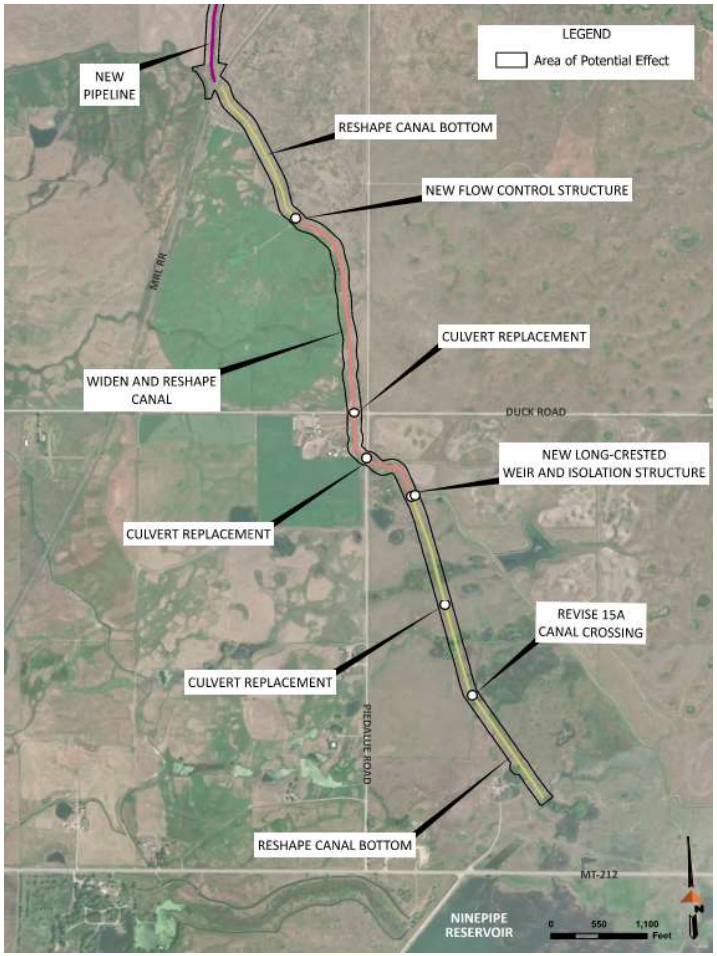


Summary of the Proposed Action

- Diversion & Intake
  - Complete replacement
  - Pump redundancy, flexibility, capacity increase
  - Year-round operations
  - Fish passage and screening
- Pump Canal
  - Pipeline from diversion to Legacy MRL railroad crossing
- Post A & Lower Pump Canal
  - Canal reshaping and widening
  - New flow control structure & long-crested weir
  - Irrigation structure and culvert replacements
- Restoration, Enhancement, and Mitigation
  - On-site enhancements
  - Off-site restoration/mitigation

Area of Potential Effect





Appendix B: USFWS Informal Section 7 Concurrence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Montana Ecological Services Office
585 Shephard Way, Suite 1
Helena, Montana 59601

In Reply refer to:
File: M.01 Bureau of Indian Affairs
Project 2025-0038776

January 7, 2025

Kari Kingery, Program Manager
Wildlife Management Program
Confederated Salish and Kootenai Tribes
P.O. Box 278
Pablo, MT 59855

Shane Hendrickson, Superintendent
Flathead Agency, Bureau of Indian Affairs
P.O. Box 40
Pablo, Montana 59855

Dear Ms. Kingery and Mr. Hendrickson,

The U.S. Fish and Wildlife Service (Service) has reviewed your Biological Assessment (BA), prepared for the Bureau of Indian Affairs (BIA) regarding the Crow Pump Diversion Reconstruction Project. This letter responds to your request for informal consultation, submitted on December 10, 2024, regarding the potential effects of the project on federally listed species and critical habitats.

The Confederated Salish & Kootenai Tribes' (CSKT) Division of Engineering and Water Resources (DEWR) is proposing to reconstruct infrastructure at the Crow Pump Diversion to improve efficiency and operability of the structure. The project site is located west of Piedalue Road, north of Johnson Road, south of Bouchard Road, and north of Montana State Highway 212 (MT-212), approximately 4 miles northeast of the community of Charlo, Lake County, Montana.

The project is funded by federal dollars managed by the BIA, requiring compliance with Section 7(a)(2) of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.). The BA evaluates these effects in accordance with the Act.

Based on the information provided, CSKT determined that the proposed project will result in the following effect determinations for species under our jurisdiction:

- Canada Lynx (*Lynx canadensis*) Threatened – *No Effect*

- Grizzly Bear (*Ursus arctos horribilis*) Threatened – *May Affect, Not Likely to Adversely Affect*
- North American Wolverine (*Gulo gulo luscus*) Threatened – *No Effect*
- Yellow-billed Cuckoo (*Coccyzus americanus*) Threatened – *May Affect, Not Likely to Adversely Affect*
- Monarch Butterfly (*Danaus plexippus*) Proposed for listing as Threatened on approximately December 12, 2024 – *Not Likely to Jeopardize the Continued Existence of the Species*

CSKT also determined there is no designated or proposed critical habitat within the Action Area for these species. Written concurrence from the Service with any *no effect* determination is not required by the Act.

The Crow Pump Diversion Project is part of the Flathead Indian Irrigation Project (FIIP), and the existing pump has been inoperable for several years. Historically, the diversion transferred water from Crow Creek to a pumping plant, which lifted water to the Crow Pump Canal for either storage in Ninepipe Reservoir or supplementation of flows in the Post A Canal. The current infrastructure consists of a spillway, radial gate, and pump wet well, but it restricts upstream fish passage, fails to prevent fish entrainment, operates inefficiently, and is difficult to maintain.

The proposed reconstruction aims to address these deficiencies through multiple improvements, including a new diversion structure with a fishway for upstream passage, a fish screen to prevent entrainment, and upgraded pumping systems to improve capacity and operational flexibility. These upgrades will include multiple pumps for redundancy and provisions for future remote monitoring and control systems. Additionally, the project will replace a portion of the Crow Pump Canal with a pipeline to increase hydraulic efficiency and reduce maintenance needs.

The project also includes significant habitat restoration efforts. Wetland and stream enhancements will restore ecological connectivity and improve habitat conditions. Restoration measures include reconnecting historic oxbow features, implementing willow brush trenching, controlling invasive species such as reed canary grass, and reseeding disturbed areas with native riparian and wetland vegetation. These actions aim to improve fish passage, expand wetland areas, and enhance the overall ecological function of the project area.

The project will also benefit irrigation needs by improving the efficiency and sustainability of the water delivery system while maintaining Tribal in-stream flow rights. Construction activities will follow detailed plans to minimize environmental impacts, such as temporary bypass channels, cofferdams, and stockpile management. Additional mitigation measures include compensatory wetland enhancements to offset any permanent impacts and alignment with Clean Water Act and CSKT regulatory requirements.

This reconstruction will address critical deficiencies in the current system, enhance fish and wildlife habitats, and align with broader CSKT goals for natural resource restoration throughout the Flathead Reservation.

Construction Overview and Timeline

The Crow Pump Diversion Reconstruction is expected to span multiple construction phases starting in May, upon the issuance of a Notice to Proceed (NTP). The primary goal is to complete the pump station by June 2026 or as soon as practicable. If delays in the NTP occur, the construction schedule will shift accordingly. Key construction activities include the temporary bypass channel and cofferdamming (approved by CSKT), demolition of the existing diversion structure, and reconstruction of the new diversion dam, intake, and wet well. Additional efforts include the installation of pressure and gravity pipelines, the pump station, and the incorporation of habitat restoration measures.

The project will include efforts to manage hydrology by constructing inlet channels, check structures, and reconnecting historic oxbows. These features aim to improve surface water movement, enhance wetlands, and restore ecological functionality. Revegetation will be initiated with native seed mixes and willow brush trenches to stabilize the site and promote the growth of native riparian species.

Weed control, including herbicide application, will follow stringent CSKT guidelines to minimize environmental impact (CSKT BA, 2024). Stockpiling and site access will be managed to avoid disturbance in designated wetland areas. Detailed plans are in place to ensure compliance with Section 404 of the Clean Water Act and CSKT Shoreline Protection regulations.

After reviewing your BA, the Service concurs with your determinations for the species listed above. Our concurrence is based on the following key conclusions provided in the BA (CSKT,2024):

1. Grizzly Bear:
    - Short-term construction activities (noise, human presence, equipment) may temporarily disturb any bears that move through the Action Area.
    - Project design and construction Best Management Practices (BMPs) include measures to minimize attractants, reduce potential for human-bear conflicts, and ensure safe disposal of all food and waste, thus reducing potential adverse effects to negligible levels.
    - Long-term land and habitat enhancements (restored riverbanks, wetlands, floodplain connectivity) will not impede bear movements or fragment bear habitat; and ultimately would provide improved habitat.
    - These along with a full list of BMPs provide in the BA.

2. Yellow-billed Cuckoo:

- Habitat within the Action Area is not of sufficient size or density to support nesting, and no recent observations of Yellow-billed Cuckoos have been recorded in the immediate vicinity.
- Transient individuals may experience insignificant or discountable disturbance (e.g., noise) if passing through.

3. Canada Lynx and North American Wolverine:
    - These species are unlikely to occur in the Action Area due to absence of suitable habitat and lower-elevation agricultural land uses.
4. Monarch Butterfly:
    - The project's short-term vegetation disturbances are expected to be minor, and re-establishment of native vegetation in riparian areas may ultimately provide some long-term benefit to pollinators.
    - No significant adverse changes to Monarch habitat components are expected.

In conclusion, the Service concurs with your effect determinations under Section 7(a)(2) of the Act. Therefore, pursuant to 50 C.F.R. § 402.13 (a), formal consultation on these species is not required. This project should be re-analyzed if new information reveals effects of the actions that may affect listed species or designated or proposed critical habitat (1) in a manner or to an extent not considered in this letter, (2) if the action is subsequently modified in a manner that causes an effect that was not considered in this letter, and (3) if a new species is listed or critical habitat is designated that may be affected by this project (50 CFR §402.16).

We appreciate your efforts to ensure the conservation of listed and proposed species as part of our joint responsibilities under the Endangered Species Act. If you have questions or comments related to this consultation, please contact Brian Ham at brian_ham@fws.gov.

Sincerely,

for Amity Bass,
Field Office Supervisor

Appendix C: Cultural Consultation Letter

Preservation Department

Confederated Salish and Kootenai Tribes

P.O. Box 278

Pablo, MT 59855

(406) 675-2700 Ext. 1075

File Code: 020

December 3, 2024

Tribal Historic Preservation Department

Confederated Salish and Kootenai Tribes

P.O. Box 278

Pablo, MT 59855

(406) 675-2700 Ext. 1075

Taryn Bushey

Division of Engineering and Water Resources

Confederated Salish & Kootenai Tribes

NEPA Coordinator

406.675.2700 ext. 1255

RE: DEWR Crow Pump Diversion

Thank you for your request for concurrence on your proposal for this study on the Crow Pump Diversion project. The CSKT Tribal Preservation Department (TPD) has taken the opportunity to review, research, and comment on the proposed actions. Being part of this process is important for the preservation of CSKT cultural resources and/or culturally sensitive sites pertaining to the practices of the Salish, Kootenai, and Qlispe people.

Preservation Department

Confederated Salish and Kootenai Tribes
P.O. Box 278
Pablo, MT 59855
(406) 675-2700 Ext. 1075

File Code: 020

TPD staff have reviewed in-office databases for any previously recorded archaeological sites in the area, as well as any previously carried out survey work. Various forms of correspondence regarding the Crow Pumping Plant have occurred since early 2024 between the Department of Engineering and Water Resources (DEWR) staff and TPD staff including Kevin Askan, the TPD Department Head and Acting Tribal Historic Preservation Officer (THPO), Travis Arlee, the TPD Compliance Manager and Kayla Ashley, the TPD Contract Anthropologist.

The TPD recognizes the need for DEWR's proposed replacement and enhancement of the current structure at the Crow Pumping Plant. Although previously recorded cultural resources have not been recorded within the proposed project, one area of cultural significance was identified within the project's immediate vicinity. Due to the proximity of this resource, there is a high probability that additional cultural resources may exist subsurface. Based on these findings, the TPD carried out a field reconnaissance of the project area. All data obtained during field work will be documented and kept in our internal databases. During field investigations, no cultural resources were identified. However, with the known resources in the surrounding area and poor visibility during the reconnaissance effort, the TPD recommends an on-site cultural resource monitor be present during all ground disturbing activities. The TPD will remain available for any necessary research regarding cultural resources, if and when needed during the length of this project. Our office will work closely with DEWR on scheduling and project details to ensure these recommendations are met. Upon project completion, this consolation will be considered complete.

Thank you,

Kevin Askan

Preservation Department Head

Acting Tribal Historic Preservation Officer (THPO)

Confederated Salish and Kootenai Tribes (CSKT) Preservation Department

CSKT Crow Pump Diversion

To comply with Section 106 of the National Historic Preservation Act, the BIA is requesting a cultural resource survey of the APE and a letter from TPD that satisfies their requirements under NHPA Section 106 and the National Environmental Policy Act (NEPA). In order to complete environmental compliance obligations for the project, Cultural Consultation would need to be completed by December 15th, 2024.

General Information

The project is being proposed by the CSKT Division of Engineering and Water Resources. The facility is owned by the Bureau of Indian Affairs (BIA) and is operated by the BIA Flathead Indian Irrigation Project (FIIP). CSKT owns and manages the majority of land within the project area. Funding for the project is being provided by the Montana-CSKT Water Compact. The current facility has operational, hydrologic, fisheries, and habitat concerns that the proposed project plans to address. The project is located in Sections 15, 16 and 21 of Township 20 North, Range 20 West, about 3.5 miles southeast of Ronan, MT.

Multiple federal regulatory actions and authorizations would be required for the project. The disbursement of federal funds and regulatory permitting constitute federal actions under implementing regulations for compliance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended, and under regulations of the Council on Environmental Quality (CEQ) at 40 CFR 1508.18(a). Given the level of improvements, an Environmental Assessment will be generated under regulations of the CEQ at 40 CFR 1500.3 and the implementing procedures adopted by the BIA in accordance with the guidelines contained in the U.S. Department of the Interior (DOI), BIA NEPA Guidebook 59 IAM 3-H (BIA, 2012).

Construction for the Crow Pumping Plant project would initiate in May of 2025 and continue through June of 2026.

Diversion Dam

The entire existing Crow Pump diversion structure, including the pump building, pumps, discharge pipeline, and outlet structure, would be demolished. The proposed replacement diversion dam would include a fishway consisting of boulder weirs constructed of grouted riprap. The fishway is designed to allow upstream passage of largescale sucker, longnose sucker, Westslope cutthroat trout, rainbow trout, mountain whitefish, brown trout, and brook trout for periods associated with both spawning and thermal refugia. The replacement intake would include a profile bar fish screen with 1.75 millimeters maximum screen openings to prevent fish from entering the wet well. The diversion dam spillway crest would be lowered by about 1.5 feet (ft) relative to the existing spillway crest elevation, and the replacement diversion would be arranged to provide improved streamlines of the creek in the area upstream of the dam and facilitate downstream debris and sediment passage. The replacement pump station would include four pumps for operational flexibility and redundancy and an increased pumping capacity of 40 cubic feet per second (cfs).

A temporary bypass channel would need to be constructed to route water around the diversion replacement construction area. A likely location of the temporary bypass channel would be north of Crow Creek, where a notch could be excavated through the river-right embankment. Cofferdams would likely need to be constructed upstream and downstream of the work area in Crow Creek, and the

cofferdams could be built of earth-filled bags (e.g., Super Sacks) or water-inflated membranes (e.g., AquaDam). Once construction is complete, the bypass channel and surrounding area would be enhanced and used as part of the proposed restoration and mitigation efforts (refer to 3.3 Restoration and Enhancement).

Pipeline

The check and wasteway structure just upstream of the Montana Rail Link (MRL) railroad crossing siphon on the Crow Pump Canal and the existing Johnson Road crossing culvert would be demolished. The railroad siphon inlet would be selectively demolished. Four pressurized pipes would exit the new pump building and extend to the top of the hill south of Crow Creek. The pressurized pipes would discharge to a new transition structure, which serves as the inlet to the proposed 48-inch diameter gravity pipeline that would extend from the transition structure to the inlet of the railroad siphon. The alignment of the new gravity pipeline would follow the alignment of the existing Crow Pump Canal, with the pipe springline (i.e., the mid-point of the pipe) generally following the existing canal invert (i.e., the bottom of the canal).

Restoration and Enhancement

Proposed Crow Pump creek restoration and wetland mitigation needs would be addressed at two on-site locations. One area is along the north side of the creek where a bypass channel would be constructed during project implementation. The other location is a series of abandoned oxbow features along the northeast side of the creek, approximately 1,200 ft downstream from the Crow Pump site.

Bypass Channel Area. This 0.75-acre area would be disturbed during construction due to a proposed staging/stockpile area and a temporary bypass channel. This provides an opportunity to restore the area post-construction to a native riparian/wetland plant community with improved habitat. The existing condition is a monoculture of reed canarygrass. As part of preparing the area for use as a bypass channel and stockpile area, reed canarygrass sod will be stripped and placed in an adjacent upland area that is currently occupied by noxious weed and invasive plant species. Once the bypass channel is no longer needed, it, and the area stripped, would be backfilled to an elevation suitable to support a hydrologically connected floodplain. Backfill would be sourced from adjacent uplands, which would result in the wetland area being slightly expanded.

Microtopography (floodplain roughness) would be incorporated by creating furrows and ridges that are within a half-foot of the desired final grading elevation. Willow cuttings and brush would be buried deeply in trenches and then backfilled (willow brush trenches) throughout the area to establish shrubs and protect them from browse by wildlife. A native seed mix would be applied throughout the area. The streambank along this area would be constructed using layers of native willow cuttings and dead brush, then backfilled with native floodplain soils (brush bank). Brush banks would also be constructed on both sides of the crow creek channel below the diversion, tying in with structures on the upstream end and existing natural streambank on the downstream end.

Oxbow Reconnection. This area is approximately 1,200 ft downstream from the Crow Pump Diversion and includes several historic Crow Creek oxbow features. These oxbow features are within 0.5 ft to 2 ft of the low flow water surface elevation in Crow Creek and would be reconnected to Crow Creek surface flows by excavating flow paths between Crow Creek and the oxbows. Approximately 1,000 linear ft of

historic oxbow would be reconnected in this manner, resulting in expansion of existing wetlands. To further spread surface water and maximize wetland expansion, willow brush trenches would be constructed at approximately 50 ft intervals along the flow paths at variable angles. This area is currently grazed as part of the Tribal Agricultural Lease Program, and the land would be rededicated from grazing to Wildlife Habitat by expanding the boundary of adjacent Wildlife Mitigation Lands. Livestock exclusion fences would be moved to match the updated boundary between grazing land and wildlife habitat. This area is currently vegetated and revegetation would be primarily passive recovery once the area has been released from grazing. Weed control would be implemented, as needed, to stay in compliance with Tribal and County weed regulations, and to support the objective of increasing wetland functions and improving habitat.

Excavation and Fill

Please note that the excavation and fill depths provided below are very approximate, and provided as singular numbers to give an order-of-magnitude feel for depths required.

Excavation

- ~8-ft deep excavation of a temporary bypass channel in the floodplain upstream and downstream of the river-right embankment, and ~13-ft-deep excavation through the embankment itself.
- Excavation associated with constructing the new diversion structure and demolishing the existing diversion. Excavation depths vary dramatically, please see the drawings.
- About 4-ft deep excavation in and very near the existing Upper Pump Canal prism to construct a new gravity pipeline.
- ~3- to 10-ft deep excavation (and replacement of material) to construct the pressure pipelines from the diversion to the transition structure.
- About 15-ft deep excavation associated with the new transition structure
- Excavation of Pond 1 and Pond 2, about 5 ft and 8 ft deep, respectively.
- (18”) excavation/stripping associated with converting the river-right floodplain from reed canary grass to improved floodplain surface.

Fill

- Fill associated with constructing the new diversion structure. Fill depths vary dramatically, please see the drawings.
- Filling of the existing canal prism upstream of the new transition structure.
- Fill associated with constructing the gravity pipeline, about up to the top of the existing canal banks.
- Fill associated with backfilling the transition structure

- (18-24”) fill associated with replacing the stripped reed canary grass housing soil from the river-right floodplain with a more favorable material for floodplain improvement and function lift.

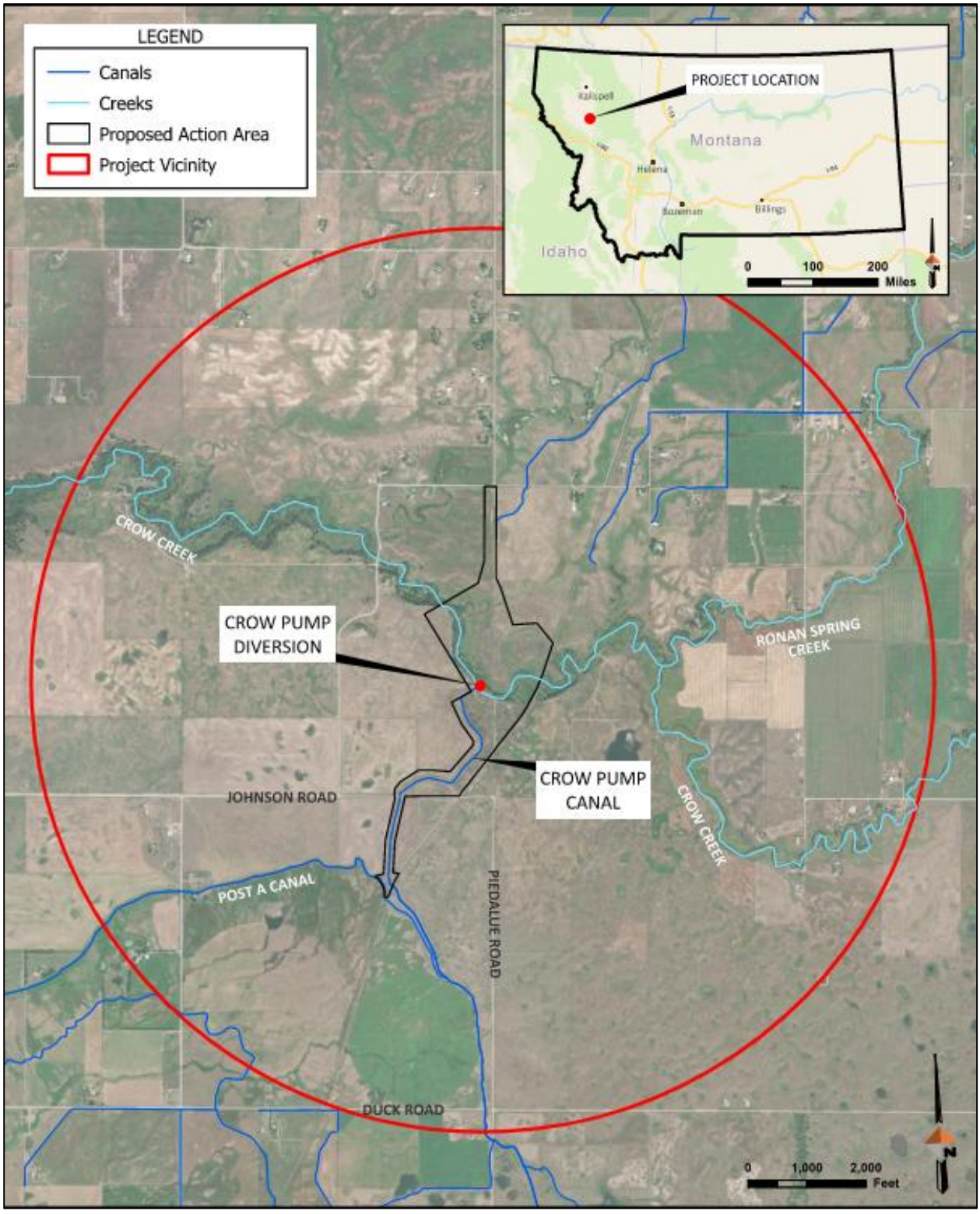


Figure 1. Project Location and Vicinity

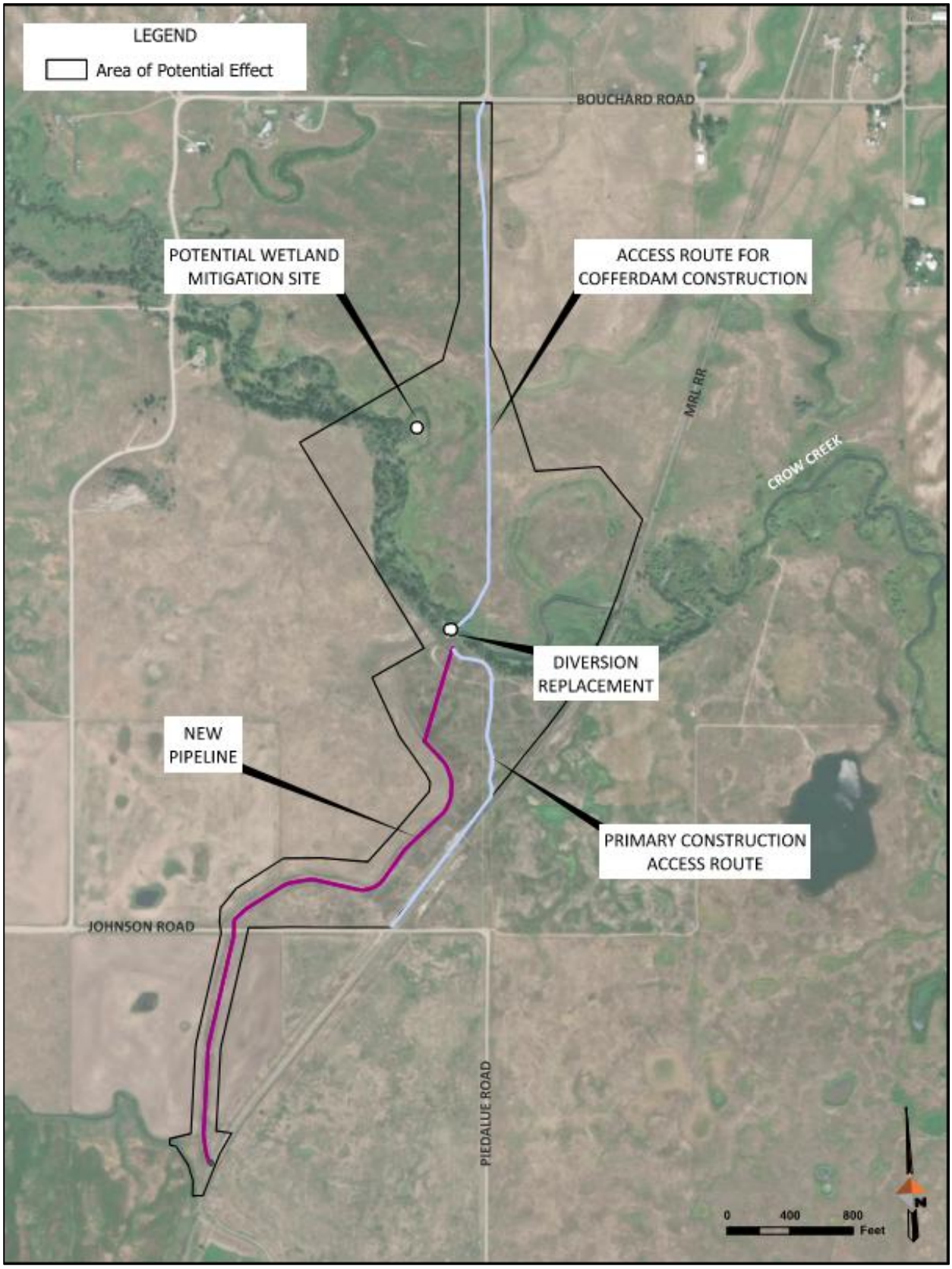


Figure 1. Proposed Action Area (Diversion and Pipeline)