



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Kicking Horse Dam Modification Project
Lake County, Montana

Final Environmental
Assessment

Prepared by:

The Confederated Salish and Kootenai Tribes Department of Engineering
and Water Resources

July 2026

ID # BIA NWR-EA-25-36



Finding of No Significant Impact

Kicking Horse Dam Modification Project Confederated Salish and Kootenai Tribes Lake County, Montana

Based on the attached final Environmental Assessment (EA), identified as **BIA-NWR-EA-25-36**¹ for the Kicking Horse Dam Modification Project (Project) for a proposal to make modifications to address seepage issues and potential failure of the Kicking Horse Dam on the Flathead Indian Reservation in Lake County, MT, I have determined that by implementation of the agency proposed action with associated activities, and environmental mitigation measures as specified in the EA, the proposed Project will have no significant impact on the quality of the human environment. In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, an Environmental Impact Statement will not be required.

This determination is supported by the following findings:

1. Agency and Tribal Interdisciplinary Team involvement was conducted and environmental issues related to development of the Project were identified. Alternative course of action and best management practices (BMPs) were developed in response to environmental concerns and issues. The following coordination was performed during project development:
 - Interdisciplinary field review, Summer 2022
 - Interdisciplinary Team project review, Summer 2024
 - Ksanka Culture Committee meeting December 11th, 2024
 - Joint Culture Committee (KCC and SQCC) meeting January 29th, 2025
 - Séliš-Qlispé Culture Committee meeting February 11th, 2025
 - Ksanka Culture Committee meeting February 12th, 2025
2. The EA discloses the environmental consequences of the “proposed action” and “no action” alternatives.
3. The proposed action will not cause a significant effect to water resources or wetlands (E.O. 11990). The Project will not result in discharge of pollutants into waters of the U.S. Clean Water Act sections 401 and 404 permits will be acquired prior to the start of construction as the Project will result in temporary and permanent fill impacts to Waters of the U.S. Areas of temporary impact will be restored to pre-construction conditions following primary construction activities. Protective measures will be levied to minimize impacts to water resources and wetlands, as discussed in Sections 4.3.6 Best Management Practices, 5.2.1 Water Quality (Clean Water Act, as amended, 33 U.S.C. 1251 et seq.), and 5.2.3 Waters of the U.S. and Tribal Waters of the EA.
4. The proposed action will not jeopardize threatened or endangered species (Endangered Species Act, as amended, 16 U.S.C. 1531 et seq.) as discussed in Section 5.4.2 of the EA. A Biological

¹ Unique NEPA document type & identification number. This number tiers the finding of no significant impact to the environmental assessment.

Assessment was prepared by CSKT biologists and submitted to the U.S. Fish and Wildlife Service on October 23rd, 2024. A subsequent Letter of Concurrence was issued by the Service on November 4th, 2024, and a reinitiation letter on February 16th, 2026, agreeing with the following determinations:

- Canada Lynx (*Lynx canadensis*): The project is determined to have "No Effect" on Canada lynx due to the absence of suitable habitat within the project area and a lack of expected direct or indirect impacts from the proposed modifications.
 - North American Wolverine (*Gulo gulo luscus*): The project will have "No Effect" on the North American wolverine, as it lacks suitable habitat within the action area and does not affect wolverine populations or critical habitat.
 - Yellow-billed Cuckoo (*Coccyzus americanus*): The project is determined to have "No Effect" on the yellow-billed cuckoo, given the lack of riparian habitat in the vicinity and the absence of known breeding populations.
 - Grizzly Bear (*Ursus arctos horribilis*): The project "may affect, but is not likely to adversely affect" grizzly bears.
 - Monarch butterfly (*Danaus plexippus*): The project is "not likely to jeopardize the continued existence of" monarch butterflies.
 - Suckley's cuckoo bumblebee (*Bombus suckleyi*): The project is "not likely to jeopardize the continued existence of" Suckley's cuckoo bumblebee.
 - Section 4.3.6 outlines BMPs that will be followed during Project implementation in order to minimize or eliminate impacts to listed species in the project area as well as to aquatic resources and nesting and migratory bird species.
 - The Biological Assessment, Letter of Concurrence, and reinitiation correspondence are provided in Attachment B to the EA.
5. There are no adverse effects on historic properties for the purpose of 36 CFR 800.9(b) by preserving archeological value through conduct of appropriate research in accordance with applicable standards and guideline (National Historic Preservation Act, as amended, 16 U.S.C. 470). Should undiscovered archeological remains be encountered during ground-disturbing activities, work will stop in the area of discovery and the stipulations of 36 CFR 800.11 will be followed.

Various meetings and coordination efforts were held with the CSKT Tribal Preservation Department and the Séliš-Qlispé and Ksanka Culture Committees. A Letter of Cultural Clearance was issued on August 6th, 2025 and is provided in Attachment C to the EA. The letter discusses the historical, present, tangible and intangible importance of the area for the Tribes. Impacts to cultural resources will be offset as part of future efforts in coordination with TPD and the Culture Committees. Cultural resources are discussed further in Section 5.5 of the EA. A cultural resource monitor will be present during any ground-disturbing activities related to the Project.

6. Impacts to public health and safety are discussed in Sections 5.7.2 and 5.8.4 of the EA. By implementing the project, risks to public safety would be mitigated for. Traffic control, area closures and road improvements to provide emergency ingress/egress would minimize public safety issues during construction.

7. Protective measures will be levied to protect air (Clean Air Act, as amended, 42 U.S.C. 7401 et seq.) and minimize noise impacts as outlined in the measures listed in Section 4.3.6 Construction Best Management Practices of the EA and as described in Sections 5.3 Air Quality and 5.8.2 Noise and Light.
8. Energy resources (Energy Policy Act of 2005) and flood plains (E.O. 11988), are not analyzed in the EA as these resource concerns are not present in the Project Area.
9. The proposed action would not result in negative impacts to the economic and social conditions of the affected Indian community and would provide year-round employment opportunities during the project while facilitating Indian Preference hiring procedures.
10. The Project will not have significant impacts on: natural and unique geographic features; park, recreation, or refuge lands; wilderness areas; wild and scenic rivers; national natural landmarks; sole or prime drinking water aquifers; prime and unique farmlands; national monuments; eagles and migratory birds, and other ecologically significant areas. The project schedule was organized around the avoidance of impacts to nesting birds during nesting season as discussed in Sections 4.3.6 and 5.4.3. Permanent impacts to ecologically sensitive/critical areas would occur during Project Construction and these impacts would be offset by the acquisition of off-site land to be managed by the CSKT Wildlife program due to the inability to replicate the nature of the lost resources on site. These details are discussed in Sections 5.7.3.3 and 5.9 of the EA.
11. The proposed action will not produce highly controversial effects on the quality of the human environment, and will not have unresolved conflicts concerning alternate uses of available resources.
12. The proposed action will not have highly uncertain effects on the human environment or involve unique or unknown risks.
13. The proposed action will neither set a precedent for future actions with significant effects nor pre-decide any future considerations.
14. The Project is not related to other actions with individual insignificant but cumulatively significant environmental effects. Reasonably foreseeable federally funded actions are discussed in Section 5.9 of the EA and coordination between parties would be exercised in order to avoid conflicts with adjacent construction activities. The Project would not result in cumulative effects on the environment.
15. The proposed action will not affect American Indian Religious Freedom (42 U.S.C. 1996). The action will not limit access to, and ceremonial use of, Indian sacred sites on federal lands, by Indian religious practitioners, and/or adversely affect the physical integrity of such sites (Native American Graves Protection and Repatriation Act, 25 U.S.C. 32).

16. The action will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or may promote the introduction, growth, or expansion of the range of such species. Disturbed soils will be reclaimed and reseeded with a CSKT-approved seed mix as soon as possible after construction activities in order to minimize the recruitment of invasive species.
17. The proposed action will not violate any statute or regulation established to govern the accumulation, storage and disposal of solid or hazardous waste (Resource Conservation and Recovery Act of 1976; 43 U.S.C. 6901, et seq.).
18. The proposed action will not threaten a violation of federal, state, local, or tribal law or requirements imposed for the protection of the environment. The Project would adhere to all Best Management Practices as outlined in section 4.3.6 of the EA and would comply with any associated permit conditions.

Gene Hughes, Acting Agency Superintendent
Flathead Agency
Bureau of Indian Affairs
U.S. Department of the Interior

Date

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Attachments

Attachment A: Kicking Horse Dam Modification, Final Design Plan Set (provided separately)
Attachment B: Endangered Species Act Section 7 Biological Assessment and Letter of Concurrence
Attachment C: National Historic Preservation Act Section 106 - Letter of Cultural Clearance
Attachment D: Wetland Delineation Report and Approved Jurisdictional Determination Letter (USACE)

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PROFESSIONAL INTEGRITY DISCLOSURE STATEMENT

Pursuant to the requirements of 43 CFR §46.105 & 107 and NEPA section 107(f), 42 U.S.C. 4336a(f), the Bureau- or applicant-directed contractor certifies that the environmental document for this project has been prepared with professional and scientific integrity, using reliable data and resources that meet Bureau and relevant Federal information quality standards for decision-making, and that the contractor (below) has no interest, financial or otherwise, in the outcome of this action.

Title: NEPA Coordinator – Confederated Salish and Kootenai Tribes

Project Name: Kicking Horse Dam Modification Project

Applicant: Taryn Bushey

Applicant Location (City & State): Ronan, Montana

Title: NEPA Coordinator – Confederated Salish and Kootenai Tribes

Signed:

Date 10/30/2025

2.0 Introduction

The Confederated Salish and Kootenai Tribes (CSKT) of the Flathead Indian Reservation (FIR) are proposing to modify the Kicking Horse Dam Facility (Facility) through the implementation of the Kicking Horse Dam Modification Project (Project). The Facility is owned by the Department of Interior, Bureau of Indian Affairs (BIA) and is operated by the BIA Flathead Indian Irrigation Project (FIIP). CSKT has a self-governance compact with the BIA that includes the administration of the Safety of Dams Program (SOD) for dams on the FIR as well as two off-reservation dams. Additionally, the Bureau of Reclamation (BOR) performs routine analyses on SOD facilities to assess the condition of the dams and the risks of failure. SOD is the contracting officer's representative and BOR is the engineer of record for the proposed Project.

Funding for the proposed Project is provided by the Secretary of the Interior through the Montana Water Rights Protection Act¹, the authorizing mechanism for the CSKT-Montana Water Compact² (Compact). Given the federal funding and approvals required, the Project is required to comply with the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321-4347 (NEPA) and Title 43 of the Code of Federal Regulations (CFR) (42 USC § 4321-4375, Title 43 CFR). This Environmental Assessment (EA) has been prepared in accordance E.O. 14154 Unleashing American Energy; Section 2 of Executive Order 11514, Protection and Enhancement of Environmental Quality, as amended by Executive Order 1199; the Department of the Interior Departmental Manual 516 DM 1, and the Department of the Interior (DOI) regulations (43 CFR Part 46)

2.1 Project Area and Location

The Project is located on the FIR in Lake County, Montana approximately five miles southeast of the town of Ronan in Section 30, Township 20N, Range 19W (**Error! Reference source not found.**). The Project can be accessed via Kicking Horse Dam Road which extends from the turnoff at U.S. Highway 93 and along the southern border of the Kicking Horse Reservoir (reservoir) to Eagle Pass Road. Kicking Horse Road intersects the Canal Road, which follows the western perimeter of the

¹ Pub. L. 116 – 260, 134 Stat. 3008, <https://www.congress.gov/116/plaws/publ260/PLAW-116publ260.pdf>

² 85-20-1901, MCA, https://leg.mt.gov/bills/mca/title_0850/chapter_0200/part_0190/section_0010/0850-0200-0190-0010.html

reservoir and terminates at Mollman Pass Road to the north. The Project Area (

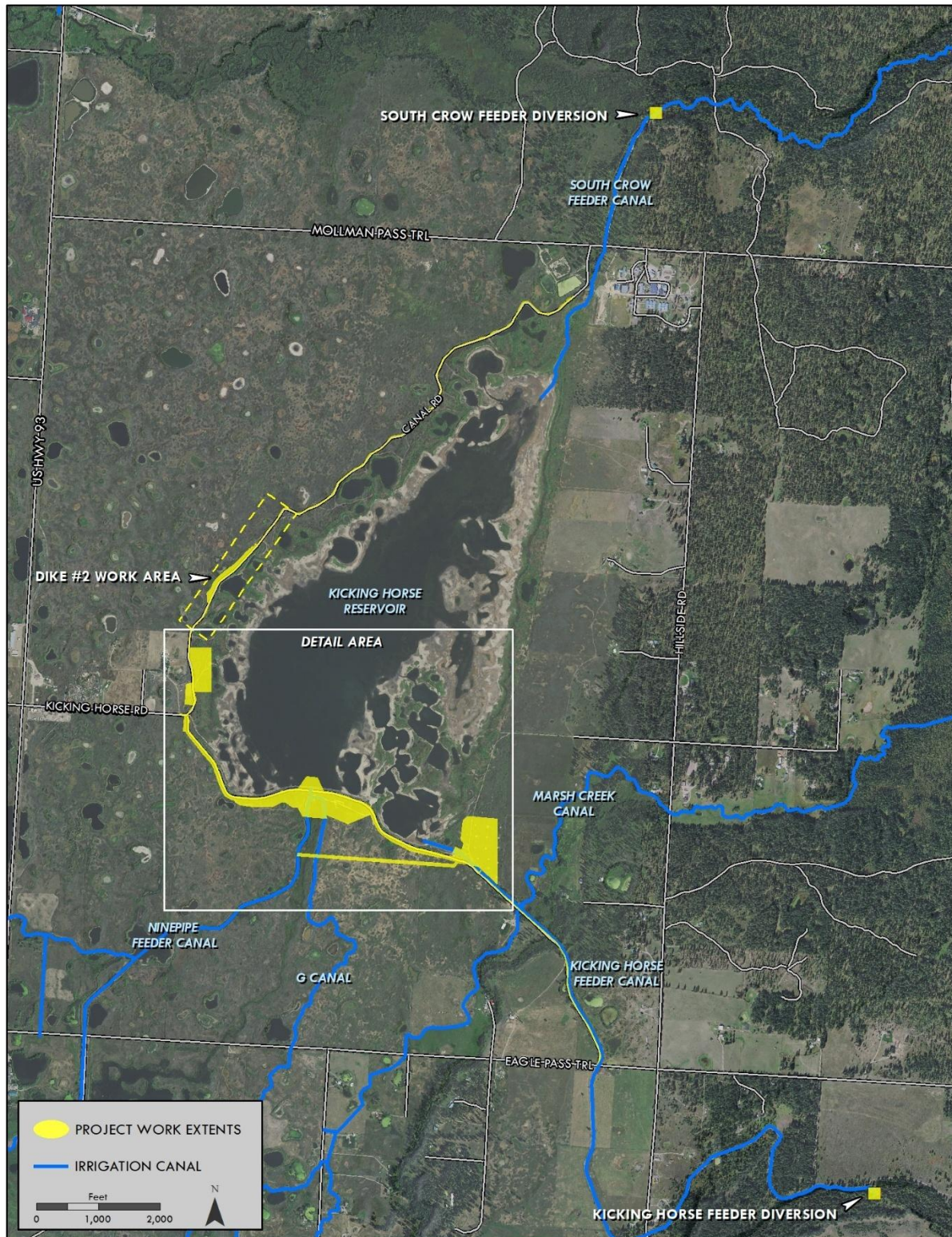


Figure 2. Kicking Horse Dam Modification Project Area.

) is approximately 50 acres in size and encompasses the dam's foundation, dikes and outlet works; inlet and outlet feeder canals; access roads to, from, and within the Project Area, and surrounding topography adjacent to the Facility and the reservoir. The Project also includes the placement of cofferdams immediately downstream of both the South Crow Feeder Canal and Kicking Horse at Post Creek headworks within the canals.

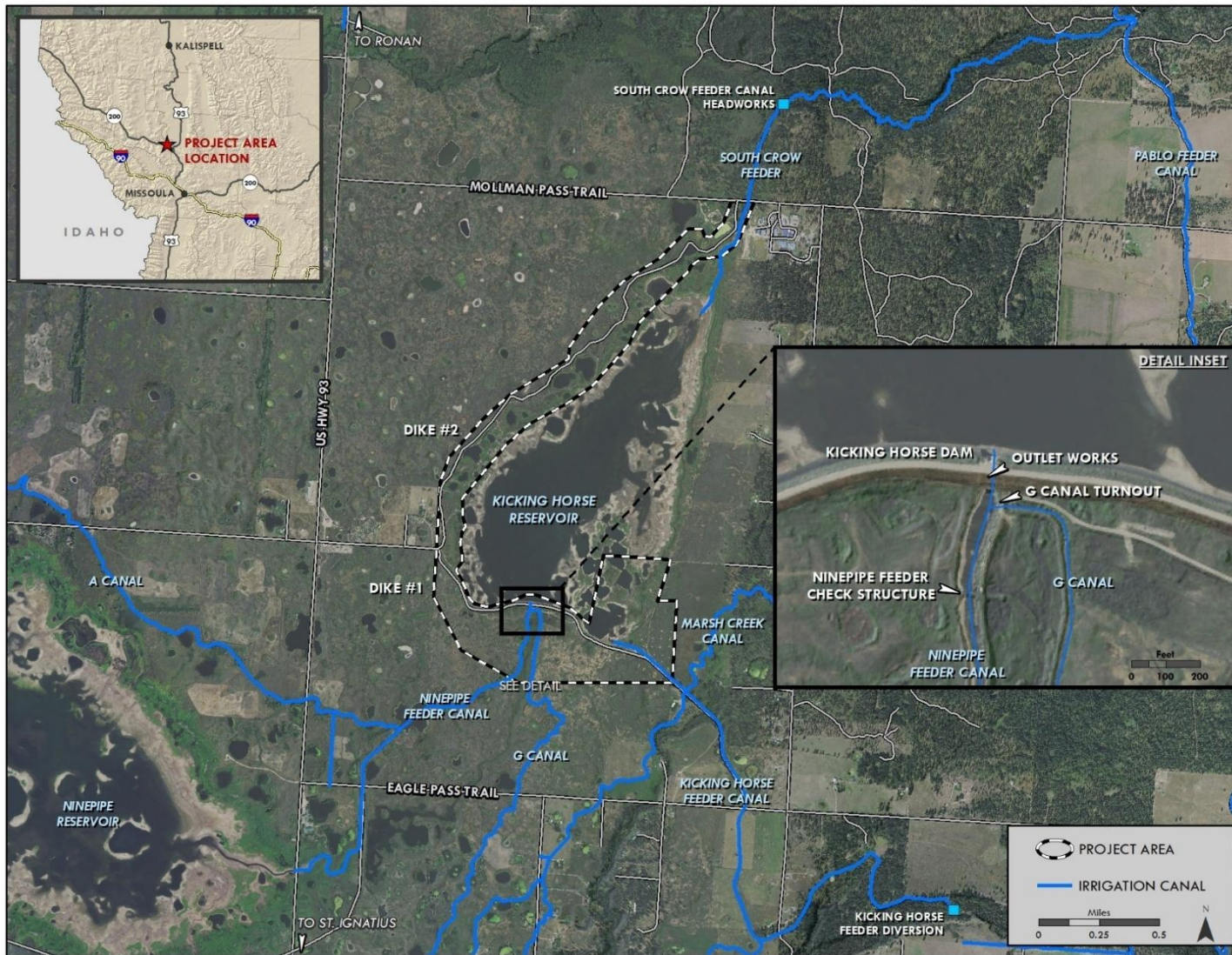


Figure 1. Kicking Horse Dam location and existing features.

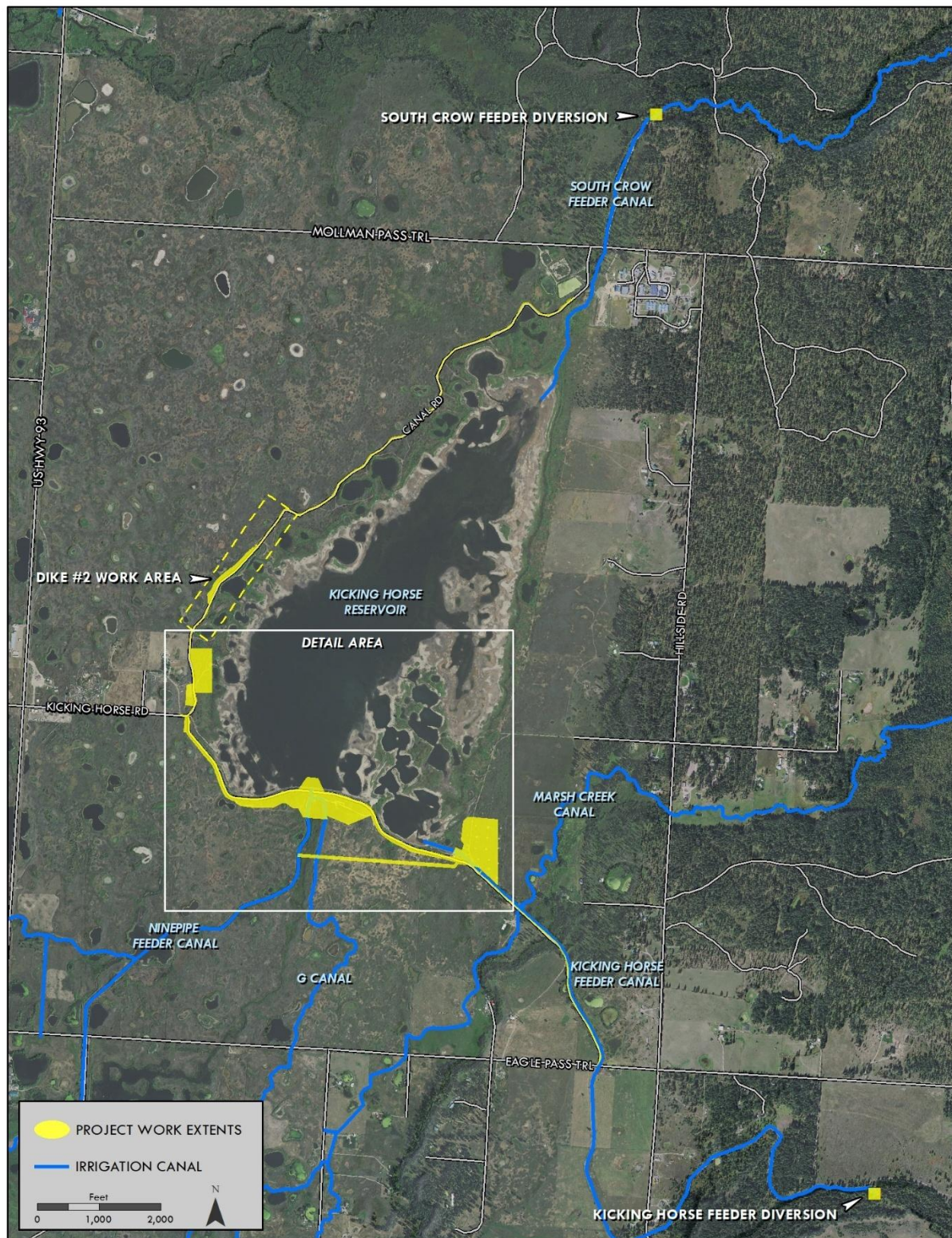


Figure 2. Kicking Horse Dam Modification Project Area.



Figure 3. Kicking Horse Dam Modification features and disturbance area – detail area (excludes Dike No. 2 and road north).

3.0 Purpose and Need

3.1 Background and Existing Conditions

The Kicking Horse Reservoir is an off-stream storage facility constructed by the BIA in 1930. Existing features at the Facility are presented in Figure 1. The existing facility consists of a homogenous earth fill dam structure with an approximate crest elevation of 3068.9 feet; a low-level outlet works structure with a capacity of 750 CFS; and three dikes located along the west side of the reservoir. Dike No. 2 consists of a 10 to 15-foot high, 1,000-foot long homogenous clayey embankment. Seepage is present at the downstream toe of Dike No. 2 which feeds a series of high value pingo wetlands. The Top of Active Conservation capacity (TAC) of the reservoir is at 3063.0 feet and is then drained to an approximate minimum pool level of 3049 feet in September.

The reservoir is fed by two canals: Kicking Horse Feeder Canal from the southeast, and South Crow Feeder Canal from the north. Water stored within the reservoir is discharged via the Ninepipe Feeder Canal which flows into Ninepipe Reservoir located approximately 1.5 miles downstream of Kicking Horse Dam, and the G Canal Lateral (G Canal) which originates at a check/turnout structure roughly 40 feet downstream of the outlet works in Ninepipe Feeder Canal. The reservoir supports up to 26,815 FIIP irrigated acres in the Charlo Irrigation Service Area as well as approximately 2,500 acres in the Moiese Irrigation Service Area. The outlet canals and downstream infrastructure are accessed for administrative purposes via under-developed two-track roads on the east and west sides of the outlet which risk impacting sensitive wetland habitat due to the lack of a formal path.

Ninepipe Feeder Canal is comprised of a bottom width of 33 feet with a 2:1 side slope with approximately eight-foot banks from invert to top of bank. The canal's historic capacity of 750 cubic feet per second (CFS) has been reduced over time to 300 CFS due to erosion along its banks and changes to its original shape. The G Canal has a bottom width of six feet with a 1.5:1 side slope and capacity of 35 CFS. A water measurement weir is located within the G Canal downstream of the existing turnout.

The prairie ecosystem surrounding the reservoir is characterized by a high density of pingo scar wetlands which support quality habitat for waterfowl and other wildlife. This land also contains some of the last remaining untillied native prairie soils in the Mission Valley and is protected as wetland and upland habitat to mitigate for damages resulting from the operation of the Seli's Ksanka Qlispe' (SKQ, formerly Kerr) Dam (Confederated Salish and Kootenai Tribes 2000). The area is of important cultural significance to the Tribes, and the reservoir serves as a popular use area for anglers, hunters and other recreationists

CSKT retains a minimum enforceable reservoir pool level for the protective management of its fisheries which is superseded by the need to address dam safety issues. Historically, introduced Largemouth Bass and several trout species (Brown, Rainbow, and Brook) were most often targeted by anglers. More recently, however, Northern Pike and crappie (*Pomoxis* spp.) along with other non-native species were illegally introduced and are now self-sustaining, becoming a potential source for further illegal introductions and for downstream spread into connected waters. Additionally, because both taxa are predatory, they have the potential to strongly influence the future of the Kicking Horse Reservoir fishery.

Various analyses performed by the BIA, CSKT, and BOR include geotechnical studies, seismic hazard analyses, inundation studies, deformation modeling, and other investigations. The 2020 Feasibility Level Alternatives Risk Reduction Analysis indicates a justification to take actions to reduce the risks of dam failure (Bureau of Reclamation 2020). Primary risk factors are associated with internal erosion through the foundation and along the outlet works. The 2022 Value Engineering Report identified high risks to downstream populations as well as a potential for considerable economic, environmental, and social impacts should the dam fail (Bureau of Indian Affairs 2022). Additionally, multiple low spots along the dam crest present opportunities for overtopping. These findings have led to a reservoir storage restriction of 3060.5 feet, or 2.5 feet below the TAC, which has been in place since 2007. This may create barriers to supporting the Tribal Water Right and FIIP irrigation deliveries to the Charlo Irrigation Service Areas, as reservoir diversion allowances (RDAs) were quantified based on a water balance model that assumed normal reservoir operations. Restoring the TAC elevation would help FIIP to divert the full RDA and meet downstream historic farm deliveries, while also improving sustainability and resiliency on an already stressed water supply.

The BIA, BOR, and CSKT have identified the Proposed Action as a high priority Project in urgent need of reconstruction based on the risks associated with the Facility's current condition. Once tested and approved, modification of the Facility would address the identified risks while integrating current "state-of-the-practice" techniques into current design.

3.2 Purpose and Need Statement

The need for the Project arises from a high likelihood of failure due to internal erosion through the dam's foundation and outlet works. These conditions present an unacceptable risk to life and property, which necessitates remediation beyond the temporary solution of restricting reservoir storage elevations. Therefore, the purpose of the Project is to 1) update the Facility with modern features that reduce the risk of failure due to seepage issues, 2) establish a uniform elevation along the reservoir crest to reduce the risk of overtopping, 3) improve access and operations for administrative staff, and 4) restore historic reservoir storage elevations.

As an added consideration, future Compact implementation projects downstream of the reservoir may require an increase in the flow capacity of the Ninepipe and G canals and associated downstream structures. Therefore, restoring the outlet works and canal capacity directly downstream of the Facility would allow the flexibility for the desired future flows to be delivered to downstream irrigation service areas while still maintaining and improving upon current operations.

Lastly, the proposed Project includes the dewatering of the reservoir for a time in order to facilitate construction activities. This action presents the opportunity to address invasive fish populations with the application of piscicide in the remaining reservoir pools and restocking the reservoir post-construction (see section 4.3.1.1).

4.0 Proposed Action and Alternatives

A wide range of alternatives were identified in the 2020 Feasibility Level Alternatives Risk Reduction Analysis (Bureau of Reclamation 2020). Because there were no unresolved conflicts with respect to alternative measures of meeting the Purpose and Need, only the No Action and Proposed Action Alternatives have been analyzed in this EA (U.S. Department of the Interior 2025).

4.1 No Action Alternative

Under the No Action Alternative, Compact funds would not be expended and CSKT would not implement the Project. The current Facility would remain in place as described in 3.1 Purpose and Need

Background and Existing Conditions. Potential risks to public safety (as discussed in section 5.8.4) would not be resolved and the Facility would continue to experience an unacceptably high risk of failure due to internal erosion issues. The dam would continue to lack a drainage system to address seepage. Additionally, the reservoir would remain at a restricted elevation, perpetuating water management difficulties in the valley. Administrative access to downstream infrastructure would continue via poorly defined routes, risking damage to sensitive habitat. Ongoing operation and maintenance (O&M) activities such as concrete repairs, conduit grouting, and gate rehabilitation and a substantial increase in the current O&M budget would be necessary (U.S. Department of the Interior, Bureau of Reclamation 2018). Still, these efforts would fail to reduce the risk to a satisfactory level due to the condition of the outlet works and unstable foundation beneath the dam. For these reasons, the No Action Alternative does not meet the Purpose and Need.

4.2 Alternatives Considered but Dismissed

The BOR worked closely with CSKT resource specialists throughout the design process of the Proposed Alternative in order to reduce the footprint of the proposed roadways, underground power, and borrow area, minimizing or eliminating impacts to sensitive resources wherever possible. Primary impact concerns were associated with wetlands, vegetation, untilled native soils, and cultural resources. Potential impacts to these resources are described in the relative sections in section 5.0 Affected Environment and Environmental Impacts)

Additional design element alternatives were identified in the 2020 Risk Reduction Analysis that would address seepage through the dam and are described briefly below. These alternatives did not meet the Purpose and Need therefore were not carried forward for detailed analysis.

Blanket Drain -A blanket drain at the downstream toe of the embankment would address internal erosion through the foundation or along the outlet works conduit by collecting seepage from the foundation and passing it through an unfiltered exit. The design team chose not to move forward with this alternative as the blanket would have to extend downstream to such a distance that it would render this solution infeasible due to high costs and extensive impacts to the downstream ecosystem. This alternative would not address the risk of overtopping due to low spots along the dam crest, and would not improve FIIP access to downstream infrastructure.

Upstream Seepage Barrier - A seepage barrier comprised of a geomembrane or geosynthetic clay liner on the upstream face of the embankment would extend into the reservoir to restrict and lengthen the seepage

pathway. The analysis determined that this alternative would not address flaws in the underlying foundation, may not completely cut off seepage, would be at risk of damage from external factors such as animal burrows or extensive vegetation, and the inclusion of a secondary alternative would be necessary. This alternative would not address the risk of overtopping due to low spots along the dam crest, and would not improve FIIP access to downstream infrastructure. For these reasons, this alternative was eliminated from further consideration.

Borrow Area Restoration - Alternative locations and designs for the restoration of the borrow area (or mitigation for associated impacts) were considered but were not practicable for the purposes of creating functional habitat that coincided with reservoir operations. Issues with design alternatives were associated with habitat functionality as well as increased human/wildlife conflicts due to the proximity of potential nesting habitat to recreational traffic. Wetland habitat restoration is not an objective described in 3.2 Purpose and Need but is included in the Proposed Action in order to reduce or offset impacts to natural resources caused by the Project.

4.3 Proposed Action Alternative

Under the Proposed Action Alternative, Compact funds would be expended on the proposed dam modifications and CSKT would implement the Project. An overview of Project features is presented in Figure 2 and Figure 3. The Project Design Drawings are presented as Attachment A and specific sheets are referenced in the following text. The Proposed action would comprise of approximately 50 acres and includes the following: 1) dam and dike modifications (section 4.3.1); 2) improvements to downstream infrastructure (4.3.2); 3) borrow area use and restoration (section 4.3.3); and 4) and ancillary work features such as construction access, staging and internal structure details (section 4.3.4). The project would be expected to occur over a four-year period and a detailed construction schedule is outlined in Section 4.3.5. Descriptions of each of these project elements are provided in the following sections.

4.3.1 Dam and Dike Modifications

4.3.1.1 Outlet Works Replacement

The existing outlet works would be removed and replaced along the same alignment with a slightly larger footprint due to increased building standards when compared to original construction. (See Design Sheets 6-D-60037 to 6-D-60039). Excavation of the outlet works would extend down to soils that demonstrate low permeability and high resistance to internal erosion. The area surrounding the new structure would then be backfilled with impervious, imported material, which would be specified by the selected con. The upstream slope of the dam would be protected from erosion with a layer of riprap placed on a 1-foot-thick bedding layer and the downstream slope would be covered with topsoil and erosion control matting and seeded with a CSKT-approved seed mix.

The proposed outlet works would use a double barrel orientation consisting of two 6-foot 3-inch diameter circular conduits and would have a similar discharge capacity as the existing structure. The double barrel orientation would allow for each gate to be operated independently with its own emergency gate, regulating gate, and impact basin, and would allow for lower discharges by operating just one gate. An upstream intake tower and gate house would be constructed and accessed by a footbridge from the dam crest. It would consist of two regulating slide gates, two emergency gates, and bulkhead slots for each barrel of the outlet works to accommodate dewatering and subsequent maintenance activity. The existing early warning system

(EWS) and reservoir level equipment would be reinstalled and electrical conduit would be mounted on the bridge to provide power to the equipment inside the gate house.

Water Management During Outlet Works Construction

The outlet works construction would require the reservoir to be drawn down and dewatered from approximately July of the second year of construction through May of the third (See Section 4.3.5). Irrigation demands would be satisfied by pumping water out of Kicking Horse Feeder Canal above a cofferdam and bypassing flows through three elevated pipes which would terminate in the Ninepipe and G canals (**Error! Reference source not found.**). The pipes would be installed and removed outside of the irrigation season (typically mid-April through mid-September) and migratory bird nesting period (March 1st – August 16th) and would divert flows to satisfy irrigation needs downstream after the reservoir has been drawn down by the end of July. The pipes would be placed above ground without the requirement of excavation or vegetation removal and would remain in place should irrigation flows need to be bypassed the following season.

Temporary cofferdams may be placed immediately below the Kicking Horse and South Crow headworks diversions in order to preclude seepage from accumulating within the canal and flowing into the project site during the reservoir drawdown period. Cofferdams would remain in place during outlet works construction and would be confined to within the canal. Cofferdams below the Kicking Horse Headworks would be placed outside of the irrigation season. No earthwork or vegetation removal would occur as part of this action. Diversion locations can be found in Figure 2.

Fisheries Management During Reservoir Drawdown

The near complete dewatering of the reservoir (~3039 feet in elevation) would leave only a series of small, isolated pools in pothole features that existed prior to dam construction. The two deepest features (with potential depths ranging up to 6-7 feet) are located closest to the existing dam face (Figure 4).

It is uncertain if, and to what degree, the pothole features remaining below the outlet structure's invert elevation will retain suitable water and physicochemical conditions for fish survival during this period. It is likely that small numbers of fish, especially introduced bullheads (tolerant of low oxygen), Northern Pike, and crappie may persist through the winter and thus reestablish in the reservoir after it is refilled. To safeguard against this, fish species, including illegally introduced species, may be removed from the small, isolated pools remaining after drawdown with the use of piscicide rotenone or mechanical removal. This would entirely eliminate the threat of illegally introduced species and present an opportunity to restore the fisheries population to a more sustainable assemblage post construction. Rotenone is a naturally occurring compound derived from plants; it is toxic to gill-breathing animals and has historically been used to stun and kill fish for consumption. It is approved for use in fishery management by the Environmental Protection Agency (EPA). If rotenone is unavailable due to supply shortages, action would not be taken due to the ineffectiveness of other alternatives in completely eliminating unwanted non-native populations.



Figure 4. Areas in Kicking Horse Reservoir (yellow bathymetric contours) that are likely to hold water following reservoir drawdown.

4.3.1.2 Dam Cutoff Wall and Dike No. 2

The cutoff wall would be installed along the entire length of the dam at the approximate centerline of the dam crest in order to reduce or eliminate seepage (Design Sheets 6-D-60029 through 60036). The dam crest would be excavated to approximately three or four feet wide and up to sixty feet deep, keying into impervious, erosion-resistant materials within the dam foundation. Excavated material would be replaced with a self-hardening cement-bentonite (CB) slurry, providing stabilization during excavation as well as serving as an essentially impermeable wall when hardened. The CB slurry would be mixed at an on-site batch plant and pumped into the excavated wall. Details on the batch plant are described under “Ancillary Features” below.

Modifications to Dike No. 2 would follow the same procedure as the main dam crest. Disturbance limits for Dike No. 2 can be found on Design Sheet 6-D-60028. A small concrete turnout structure would be installed with an 8-inch diameter HDPE discharge pipe and a small stilling basin to supply a high value, seepage-induced wetland downstream of the dike with up to 1 CFS of water at TAC (Design Sheet 6-D-60171 through 60174).

4.3.1.3 Toe Drain

The purpose of the toe drain is to provide a filtered exit for any potential seepage that may exit through the downstream toe of the dam through the topsoil layer (Design Sheets 6-D-60041 through 60052). The toe drain would consist of a 12-inch diameter perforated pipe laid within a shallow trapezoidal trench along the toe of the dam, which would extend through the topsoil unit and terminate within the underlying clayey unit. The trench would then be backfilled with a combination of filter and gravel material, miscellaneous fill and topsoil. Seepage and/or groundwater would be collected by the toe drain and discharged in the G Canal Lateral and in the Ninepipe Feeder Canal below the check structure.

4.3.1.4 Dike Repair

To reduce the potential for a concentrated or preferential breach, all dikes would be raised to a minimum elevation of 3066.0 feet, providing a minimum of 1.5 feet of freeboard (distance from high water level and top of canal bank)

. Raising the dikes would consist of stripping vegetation within the existing road prism surrounding the reservoir and resurfacing with compacted impervious earth fill and six inches of gravel. In areas where the road is above elevation 3066.0, the existing dikes and Canal road would be leveled and topped with six inches of gravel (6-D-60057).

4.3.2 Downstream Canal Modifications and Structures

To support potential future irrigation infrastructure changes in the Charlo Irrigation Service Area, modifications to the Ninepipe Feeder and G Canals were included in the design for the Proposed Action from the outlet works impact basin to 20 feet downstream of the existing check structure. Modifications to the downstream canals and infrastructure can be found on Design Sheets 6-D-60085 to 6-D-60100.

The design for Ninepipe Feeder Canal features a restored capacity of 750 CFS by reestablishing the original prism to a 33-foot bottom width with 2:1 side slopes. The design also addresses erosion along the canal banks which has resulted in multiple low spots along its length. The canal would consist of earthen material

lined with riprap upstream and downstream of the check structure and embankment slopes. These changes would necessitate a larger reinforced concrete check structure constructed in the same location with a size and cross-sectional shape set to properly convey new canal flows and handle the appropriate seismic, soil, and hydraulic loads (Design Sheet 6-D-60086).

The G Canal outlet and turnout structure (Design Sheet 6-D-60092) would be relocated approximately 150 feet downstream of the existing turnout in order to make room for the new toe drain and to eliminate the risk of reservoir water connecting with the current alignment with G Canal, which is causing potential failure modes such as sand boils (sediment translocated from via seepage paths through the reservoir to the beds of the canals). The existing canal would be backfilled between the existing turnout and the location where the updated alignment meets the existing alignment. The capacity of G Canal would be increased to 115 CFS by increasing the bottom width to 9 feet with a 1.5:1 slope (Design Sheet 6-D-60096 and 60098). The existing weir downstream that measures flow in the G Canal would be removed and may be reinstalled as part of future infrastructure modification efforts.

4.3.3 Borrow Area Use and Restoration

Up to 28,000 cubic yards of fill material may be necessary for the dam embankment. Some of this material would be salvaged from the embankment excavation. Any additional material needed would come from a borrow area located just north of where the Kicking Horse Feeder Canal meets the southeast corner of the reservoir (**Error! Reference source not found.**). The proposed borrow area is divided into three parts: a primary borrow area; a secondary borrow area if needs cannot be met by the primary borrow area alone; and a material/stockpiling area (Design sheet 6-D-60025). In the stockpiling area, vegetation removal and excavation would not be permitted. Instead, a geotextile mat would be laid down prior to stockpiling activities in order to protect the existing native prairie soils. This may kill any vegetation that exists underneath the stockpile area, but the seed bed and soil profile would be preserved. Surfaces in the stockpiling and secondary borrow areas would be reclaimed and reseeded as necessary with a CSKT-approved seed mix in conjunction with the CSKT wildlife program. The borrow area would be accessed by a temporary culvert crossing over the Kicking Horse Feeder Canal (Design Sheet 6-D-60095).

The primary (and secondary, if used) borrow area would be reclaimed post-construction as an artificially created wetland to mimic the surrounding natural wetland features (Figure 5). The restoration design would be adjusted to match the actual area and volume of removal as determined after construction is complete. However, the current design specifies max depth and slope criteria for the final condition in order to support a diverse plant community and promote wetland development. The wetland would be constructed such that water would seasonally fill the wetland through a pipe coming from a turnout structure in the Kicking Horse Feeder Canal, similar to the one that would be installed at Dike 2. The pipe would be set at an elevation to capture a portion of the flows that occur over 20 CFS within the Kicking Horse Feeder Canal, which would typically occur between May and July. At flows less than 20 CFS, the pipe would not receive flow and no surface water would flow to the wetland. There is no constructed outlet from the wetland but any overflow from the wetland would sheet flow into the reservoir.

Due to the unknown quantity of the borrow area excavation needs, the maximum depths may not meet criteria to support wetland development post-project. In this circumstance, the borrow area footprint would be regraded to mimic surrounding topography to the greatest degree possible and reseeded with a CSKT-

approved upland seed mix. No planting of palatable forage species for grizzly bears would occur, and any seed mix used for restoration purposes would be pre-approved by a CSKT Wildlife Biologist.

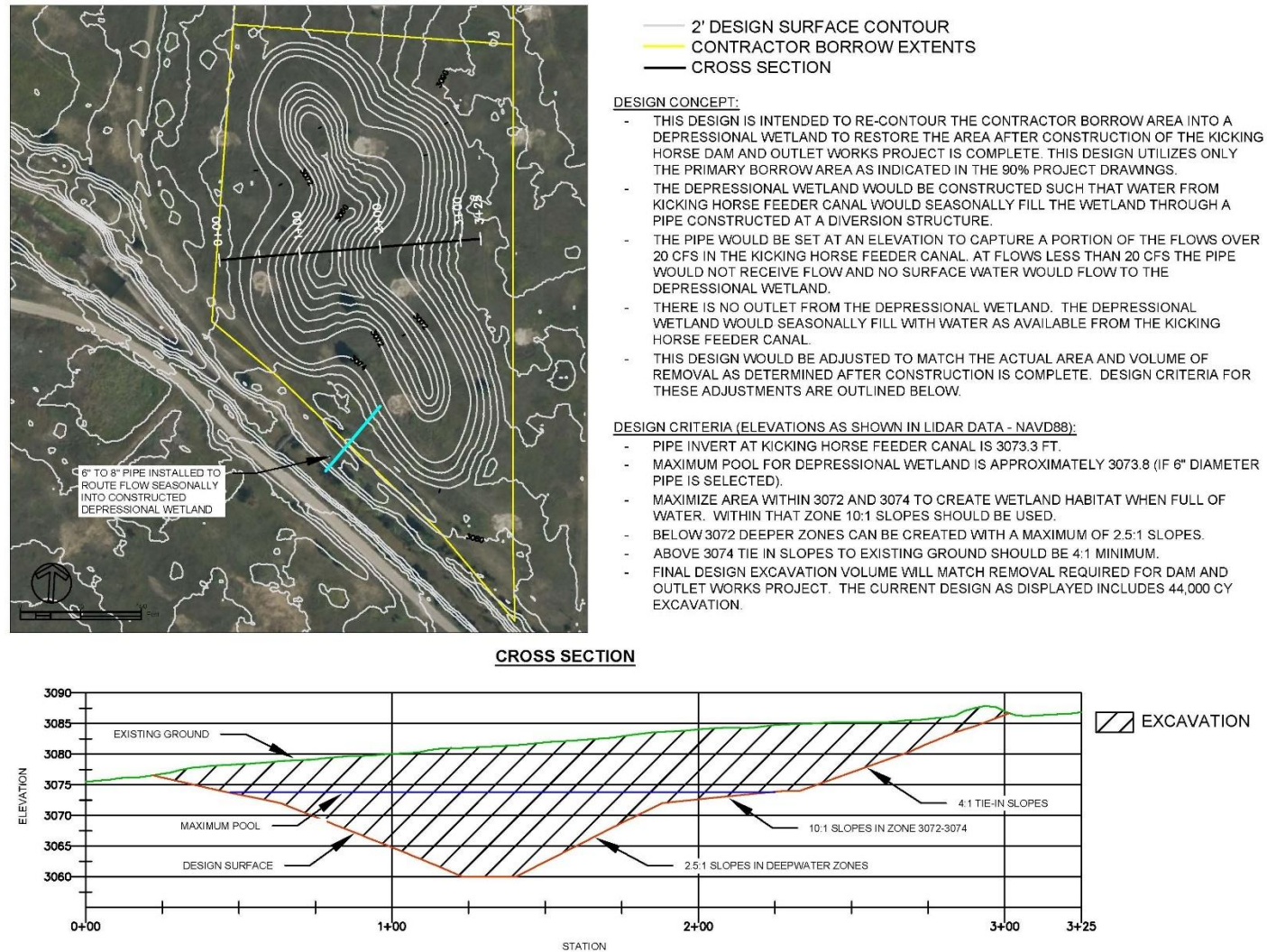


Figure 5. Borrow Area Restoration Pingo Grading Design Concept

4.3.4 Ancillary Project Features

Contractor Use Areas

Contractor use areas can be found in Figure 3. Contractor Use Area No. 1 is located on the west end of the Project Area and is approximately 6.25 acres. This location would host a batch plant for the mixing of the CB slurry. CB material would be imported via trucks and stored on-site in containers. These materials would be mixed with water from Kicking Horse Reservoir or Ninepipe Reservoir and then pumped along the dam crest to the point of excavation during cutoff wall installation. Contractor Use Area No. 1 would be in use for batch plant operations during the first construction season and for construction related activities for the remainder of the project. After construction, the area would be reclaimed as close as possible to its original condition, including the replacement of the existing recreational facilities if their removal is necessary for construction.

Contractor Use Area No. 2 is located to the east of the outlet works on the downstream side of the Facility and is approximately 1.86 acres. This staging area would be utilized for various purposes such as temporary stockpiling of material, staging of materials and equipment, and access around the site. Geotextile fabric would be laid down prior to work to protect the existing ground surface, seed bank, and soil profiles. The geotextile would be carefully removed upon completion to maintain soil profiles and the area would be reclaimed and seeded with the appropriate CSKT-approved mixes as necessary.

Two contractor field office and parking areas totaling approximately 1.6 acres south of Contractor Use Area No. 1 would be used for the duration of the project and would be reclaimed prior to end of construction.

Access Roads

Two permanent roads on the east and west sides of the outlet works would be improved/constructed as part of the Proposed Action and would be gated for administrative access post construction (Design Sheets 6-D-60042, 6-D-60046 and 6-D-60058). The east road would follow existing alignment and then would extend along the new alignment of the G Canal to provide permanent access to the G Canal turnout and check structure. A permanent road on the west side of the outlet works would replace the existing access on a new alignment that avoids wetland features, providing access from the dam crest to the downstream structures. A temporary crossing over the Ninepipe Feeder Canal would be constructed for use during the project. Construction of access roads would require stripping of vegetation and topsoil, grading/leveling, and placement of compacted soil, geogrid, and gravel surfacing.

Suitable gravel materials excavated from the dam crest not utilized by the contractor would be placed and compacted along the Kicking Horse Dam road from the east side of the reservoir to Eagle Pass road, improving road conditions for future access as well as for emergency ingress/egress during construction. Dike raise activities on Canal road are described in section 4.3.1.4 and management of residential access during construction is discussed further in section 0 Transportation Networks.

Two locking access gates would be installed post-construction, precluding public access to Canal road along the western portion of the of the reservoir from approximately March 1st to July 15th. The purpose of these gates would be to minimize disturbance during the nesting season from vehicle traffic and recreation activity. The access gates would be managed by the CSKT Wildlife Program.

Electrical Upgrades

Permanent three-phase power would be installed at the dam site to provide power for the mechanical features within the new outlet works and downstream structures. Underground power would tie in to existing overhead power at the access gate at Kicking Horse Dam and would follow the alignment of the new permanent access road on the west side of the outlet works downstream of the dam, terminating at a transformer placed on a concrete pad located on the west side of the Ninepipe Feeder Canal and then routed to the outlet works and downstream structures (Design Sheets 6-D-60054 through 60055).

4.3.5 Construction Schedule and Sequencing

The project is expected to take four to five years to complete, with construction occurring year-round and beginning as early as September, 2026 and as late as March of 2027. The schedule (Table 1) in grey represents the typical construction schedule. However, construction may be able to begin as early as September, 2026 resulting in a shift in some early construction activities (shaded in orange). If project delays occur, the construction schedule would remain the same and commence the following year. Night work may occur as needed to meet project deadlines.

Reservoir drawdown and bypass of irrigation deliveries from Kicking Horse Feeder would occur predominantly outside of peak irrigation flows. The period that the reservoir would remain dewatered is shown in red in the table below. Restoration activities would occur during the plant dormancy period (typically October to March) in the first fall following the end of the main project construction and would occur adaptively until plant cover and diversity is satisfactory to CSKT wildlife managers. The borrow area access bridge would be removed and site stabilized outside of the irrigation season (mid-April to mid-September) after restoration is complete.

Table 1. Project construction schedule.

Phase	Construction Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Optional early start	Mobilization/Site Prep												
	Borrow Area Access/Site Prep												
	Downstream Access Roads												
	Install Underground Power												
	Canal/Structure Modifications												
Year 1	Mobilization/Site Prep												
	Borrow Area Access/Site Prep												
	Downstream Access Roads												
	Install Underground Power												
	Cutoff Walls and Dike Raises												
	Install Toe Drain												
	Canal/Structure Modifications												
	Install Bypass Pipes (5d) †												
Year 2	Cutoff Wall/Dike Raises (cont.)												
	Install Bypass Pipes (5d) †												
	Reservoir Drawdown ‡												
	Reservoir Dewatering												
	Replace Outlet Works												
Year 3	Reservoir Dewater Period												
	Replace Outlet Works (cont.)												
	Bypass Pipe Removal												
	Final Grading/Stabilization												
	Borrow Area Restoration												
Year 4	Restoration/Bridge Removal												

† Bypass pumping would be installed and removed outside of the migratory bird nesting season (March 1st-August 16th). Installation and removal activities would take approximately one week. Infrastructure would remain in place during year 3 and would be used if needed until the outlet works is complete and operational. Pumping may occur as needed between April and September

‡ Reservoir would be drained through typical drawdown operations in year 2, then remain dewatered for the remainder of the year and through the following late spring. See section **Error! Reference source not found.** for a detailed description of water management during outlet works construction.

4.3.6 Construction Best Management Practices

The following best management practices (BMPs) would be implemented during Project construction:

Permit compliance

- The Project would follow all requirements and conditions included in permit authorizations and clearances.
- The construction manager would review permit provisions with the contractor and copies of Project permits would be posted on-site.
- Environmental protection plans would be submitted by the contractor prior to construction and would include a Stormwater Pollution Prevention Plan, Stormwater Management Plan, Air Quality Plan, Protection of Existing Wetlands Plan, and a Remediation of Existing Wetlands Plan.
- A construction inspector would be present during construction activities to ensure permit conditions are adhered to. Coordination between the construction supervisor and permitting authorities (such as the Army Corps of Engineers, Environmental Protection Agency, Shoreline Protection Office, or other entity) may occur during construction and any conditions of non-compliance would follow the procedures identified in the permit conditions.

Erosion Control

- Turbidity filtration devices such as straw bales, silt curtains, gravel berms, bulk bags or other filtration devices shall be available and installed by the contractor in downstream canals and wetland areas as deemed necessary by the construction manager and permit conditions.
- Construction fencing (limits of disturbance) shall be installed by the contractor as deemed necessary by the construction manager
- Cofferdams constructed of bulk bags or equal non-disturbing methods (Attachment A, Design Sheet 6-D-60187) would preclude seepage water from the South Crow and Kicking Horse headworks structures from entering the project site, thus minimizing the need to pump water from the project site.

Air quality

- Fugitive dust would be controlled by wetting soil and access roads with water during dry periods.
- Atmospheric discharges of cement, pozzolan, and aggregate handling would be eliminated via means such as dust collector filtration systems, misting systems, enclosures, and vacuum-assisted cleaning systems.
- Unprotected soils within the construction area would be kept compacted (watered down or a dust suppressant applied).
- Construction site vehicles & combustion equipment would be kept in good condition to prevent excess CO₂ and NO_x emissions.
- Vehicles entering onto a hard surface roadway (primary/secondary highways) would not carry mud and debris onto these roads.
- Vehicles transporting gravel and fill would not overfill their trailers, which would cause material to be swept into the air during transport.

Vegetation, ground disturbance, and wetlands

- All vehicles would follow designated access routes to minimize vegetation and soil disturbance.
- Construction workspaces would be staked to limit ground disturbance including staging areas, access routes, and equipment storage areas.
- Limits of disturbance would be clearly staked to avoid ground disturbance (wetlands where disturbance is not authorized by permit, or other areas noted for preservation).
- The Project would follow the seeding specifications or the proposed seed mixes approved by CSKT resource specialists
- Disturbance to vegetation shall be limited to areas defined within the construction plans.
- All areas of ground disturbance would be seeded and revegetated as soon as reasonably possible after construction with a CSKT-approved seed mix.
- Weed management
 - i. All areas of ground disturbance would be seeded and revegetated as soon as reasonably possible after construction to stabilize the soil and prevent the establishment of invasive species at the site.
 - ii. All equipment would be washed prior to site mobilization to minimize the introduction of weed seeds or propagules.

Wildlife and Special Status Species

- Grizzly Bear Project-specific measures:
 - Project construction would follow the conservation measures set forth in the Biological Assessment provided by CSKT Biologists (Attachment B)
- Nesting and migratory birds
 - Vegetation removal and ground clearing activities would be conducted outside the migratory bird nesting season (15 April-16 August)
 - i. If work within this window cannot be avoided, disturbed areas would be assessed prior to disturbance by a qualified wildlife biologist to determine if any migratory bird nests may be present. If a nest is discovered, it would be left in place until the young hatch and depart.
 - ii. Removal of vegetated areas or habitats suitable for nesting could be conducted outside of the nesting window, prior to construction start, to help prevent nest disturbance during the spring or summer. However, habitat would only be removed if it is certain to be disturbed during the nesting season due to project construction activities.

Aquatic Resources

- To prevent the introduction of invasive species, the contractor shall wash equipment prior to entering the construction site.
- The timing and operations of reservoir drawdown and refilling would be coordinated with the CSKT Fisheries Program for rotenone application and restocking of fish species.

Cultural resources

- The CSKT Preservation Department (TPD) would be notified in advance of the start of construction and a cultural site-monitor would be onsite during construction.
- In the event that any cultural resources are encountered during construction, all construction activities surrounding the impacted area would cease and TPD would be contacted immediately. All construction activities would not continue until a notice to proceed is received by TPD.

5.0 Affected Environment and Environmental Impacts

This section presents the present condition of the affected environment and the potential environmental impacts of both the No Action Alternative and the Proposed Action. Direct and indirect impacts are analyzed within each of the individual resource sections below. Cumulative impacts are also considered in Section 5.9.

For the purpose of this EA, impact duration and magnitude are defined as follows:

Type

- Short-Term Impacts: Impacts that last the duration of the project and shortly after (0-5 years)
- Long-Term Impacts: Impacts that last beyond the duration of the project or are foreseeably permanent (5 years or more)

Intensity

- No Impact: Resource conditions would not change.
- Negligible: No measurable or perceptible consequence to the resource.
- Minor: A small measurable, but localized effect to the resource would occur but would be of little consequence to the resource. Simple or standard avoidance and minimization measures would easily offset the impact.
- Moderate: A measurable effect to the resource would occur. Tailored mitigation measures would likely be required to offset adverse impacts.
- Substantial: A large, measurable effect to the resource would occur. Tailored mitigation measures would be needed to offset adverse impacts and could be extensive and complicated to implement.

For this analysis all impacts are adverse unless otherwise noted (i.e., as neutral or beneficial). Geographic extent (local or regional) and frequency of the impact are also often evaluated, depending on the resource and type of impact.

Table 2 presents the resources that were initially evaluated per the Indian Affairs NEPA Guidebook (U.S. Department of the Interior 2025). Each resource was evaluated to determine whether it would be analyzed in greater detail in this EA, and the associated rationale is provided. Resources were analyzed in detail in the EA if they were determined to be associated with meaningful impacts to the environment. Resources were not analyzed further if they, 1) were not present in the Project vicinity, 2) were not applicable to the proposed action or environment, or 3) would not be expected to be meaningfully impacted by the proposed action.

Table 2. Resources evaluated in this EA and a summary of impact findings.

Component	Analyzed in this EA		Rationale
	Yes	No	
Land Resources			
Topography	x		Borrow area would be excavated during construction and recontoured post construction. Excavations to dam and downstream structures would occur.
Soils	x		Native, untilled prairie soils at site and would be disturbed.
Geologic, Mineral, Paleontological Resources		x	No Geology/Mineral/Paleontological Resources Present
Water Resources			
Surface Water Quality	x		Turbidity may occur in the downstream canals. Some wetlands are fed by surface runoff and precipitation and some through seepage through the dam.
Surface Water Rights and Use	x		Reservoir restriction currently exists and would be lifted post- construction. Reservoir drawdown period could impact irrigation deliveries. Kicking Horse Facility infrastructure maintains FIIP and Tribal water rights.
Ground Water Quality & Quantity		x	The project is not expected to affect groundwater quality or quantity
Waters of the U.S. and Wetlands	x		Project would result in temporary and permanent impacts to wetlands and waters.
Wild and Scenic Rivers		x	No Wild and Scenic Rivers Present
Air			
Air Quality/Visibility	x		Some fugitive dust from construction activity and concrete batch plant would occur.
Living Resources			
Wildlife Species & Habitat (Terrestrial & Aquatic)	x		Reservoir and surrounding area serve as high quality habitat for upland, aquatic and migratory species. Proposed project presents an opportunity to effectively manage the fisheries population. Area is managed by the CSKT Wildlife Program.
Threatened/Endangered & Special Status Species (Plants & Animals)	x		Grizzly bears utilize the area.
Migratory Birds/Bald and Golden Eagles	x		Project schedule was informed by migratory bird nesting periods. Eagles not present in the project area.
Vegetation Communities & Noxious Weeds	x		Rough Fescue/Idaho Fescue grassland type is common in the prairie area, with good diversity of native forbs. Noxious weeds are present throughout project area. Some vegetation would be cleared and revegetated as part of the project.
Agriculture (Crops, Prime and Unique Farmland)		x	Grazing practices were removed in 2001 and the area is protected as wildlife mitigation land for the building of the Seli’s Ksanka Qlispe’ Dam
Cultural Resources			
Historic Properties & Archeological Resources	x		CSKT does not consider FIIP infrastructure as eligible for listing under the National Historic Preservation Act. Kicking Horse vicinity is of historical cultural importance. Archeological resources may exist.
Cultural, Sacred, & Traditional Cultural Properties	x		Entire vicinity is identified as an important cultural site.
Socioeconomic Conditions			
Employment and Income	x		The proposed Project would create employment opportunities for skilled workers advertised through the CSKT Indian Preference Office.

Confederated Salish and Kootenai Tribes, Kicking Horse Dam Modification Project

July 2026

Component	Analyzed in this EA		Rationale
	Yes	No	
Demographic Trends		x	Project would not result in a change to demographic trends
Lifestyle and Cultural Values (Rural, Urban)		x	Project would not result in lifestyle changes
Community Infrastructure (Public Services, Utilities)		x	Reservoir irrigation deliveries are not considered a public utility.
Resource Use Patterns			
Timber Harvesting		x	No timber harvesting at site.
Agriculture		x	No agriculture at site.
Mineral Extraction		x	No mineral extraction at site.
Recreation, Hunting, Fishing and Gathering	x		Area is a popular site for boating and fishing. Two gazebos and a pit toilet exist near the entrance to the Facility which would be removed for construction and replaced post-construction. Public access would be restricted during construction. The reservoir would be temporarily dewatered. Potential exists to manage the local fishery to support native species. Fishing, upland bird and waterfowl hunting is permitted for Tribal members and non-members, and large and small game hunting and plant gathering is permitted for Tribal members at the Kicking Horse reservoir. Construction activities could temporarily impact wildlife behavior.
Transportation Networks	x		Homeowners use Kicking Horse Dam road to access their homes. Portions of the road would be improved to allow safe emergency ingress/egress at the site. The Canal road would be raised and improved along the east side of the reservoir. Seasonal closures on portions of the Canal road would be enforced post-project. Traffic on Hwy. 93 may be delayed and traffic control measures employed during construction.
Land Use Plans	x		Area is SKQ Upland Mitigation Land. Impacts to wetlands and uplands would require offsite mitigation since onsite opportunities are limited.
Other Values			
Wilderness Areas, Wildlife Refuges, & Ecological Sensitive/Critical Areas	x		Area is considered an Ecologically Sensitive/Critical Area. It is the largest area of prairie pothole habitat that has never been plowed and still hosts most of the native plants represented in the area. A vast majority of these plants have been lost throughout the valley due to development and land use changes.
National Parks, Monuments & Historical Sites		x	Area is not a National Park, Monument, or Historical Site
Noise and Light	x		Work may occur before or after sunset in order to meet construction deadlines. Construction activity would increase noise levels in the vicinity.
Visual	x		Construction activity would result in a temporary change in aesthetics
Public Health and Safety	x		Project would result in an increase of construction traffic at the turnoff to Kicking Horse Dam road from Highway 93 that may need to be managed during construction. Public access would be restricted during construction.
Climate Change (Greenhouse Gases)		x	Project would not affect Climate Change
Indian Trust Assets	x		Project occurs on trust land
Hazardous Materials		x	No hazardous materials would result from or be used on the project

5.1 Land Resources

Geology, mineral, and paleontology resources on the Project area would not be impacted and were therefore not evaluated further. Topography and Soils are evaluated below.

5.1.1 Topography

5.1.1.1 Affected Environment

The Facility is located on the valley floor with relatively flat topography. Elevations within the Project Area range from approximately 3047 to 3077ft, typically draining from northeast to southwest. Historically, the valley was created by the repeated draining of glacial Lake Missoula, carving out the wetland features which characterize the local landscape. The lands surrounding the reservoir are untilled prairie, leaving the only manipulated topography that limited to the construction of the Facility.

5.1.1.2 No Action Environmental Impacts

Under the No Action Alternative, the Facility would remain in its current state and configuration and the Project Area would not experience any topographic changes. Fill materials would not be needed; therefore, no excavation would be required to provide access across Kicking Horse Feeder Canal nor within the proposed Borrow Area. Restoration of the Borrow Area to construct wetland habitat thus would not occur. Neither temporary nor permanent fill of wetlands downstream of the dam would be required, therefore, landscape-scale wetland topography would remain unchanged. However, a Facility breach could result in localized topographical changes associated with the breach itself due to scour and sediment deposition in low areas.

5.1.1.3 Proposed Action Environmental Impacts

Under the Proposed Action Alternative, moderate (with the exception of the borrow area) short-term and long-term changes in topography would occur and would be localized to the Project Area. The proposed changes to the dam, outlet works, dikes and access roads would result in a permanent increase in elevation and lateral footprint of the downstream side of the dam. Temporary and permanent fill of wetlands and waterbodies (Section 5.2.3), and other topographic features would occur as a result of construction activity and increased footprint of new project features. Temporary impacts would be restored to their original conditions post-construction through regrading and reseeding. Ninepipe Feeder and G canals would be excavated and reshaped to restore them to their original prisms which have eroded overtime, and the G canal bottom would be increased by three feet. The check and turnout structures located within the two canals would permanently occupy a larger footprint post-construction as well (0.02 acres increase at the check structure and 0.01 acres increase at the turnout). Borrow area excavations and restoration design would result in a substantial permanent change in the topography from a natural upland slope to a constructed wetland feature. Changes to the overall topography and drainage patterns of the valley floor would not occur with the Proposed Action Alternative. No changes in topography at the Kicking Horse and South Crow Headworks would occur.

5.1.2 Soils

5.1.2.1 Affected Environment

Natural Resources Conservation Service (NRCS) Web Soil Survey data for the Kicking Horse Reservoir vicinity (excluding water resources) is summarized in Table 3. The Area of Interest (AOI) extends from Mollman Pass Rd. to Eagle Pass rd. and from US Highway 93 to Hillside rd. With the exception of the original dam construction footprint, the 2,498 acres of land surrounding the Kicking Horse Reservoir represent the largest area of untilled native prairie soils on the valley floor of the Mission Valley and support a representation of most plants native to the area (see section 5.4.1) The majority of soils are comprised of Post-Ronan-Water complex, 2 to 8 percent slopes which encompasses the north, west, and most of the south downstream sides of the Facility. The portion of the Kicking Horse Feeder Canal which would be the location of the canal crossing and the stockpiling portion of the proposed Borrow Area is comprised of McDonald cobbly silty clay loam, 4 to 8 percent slopes, and the remainder of the proposed Borrow Area and wetland restoration site is comprised of McDonald cobbly silty clay loam, 2 to 4 percent slopes (NRCS, 2019).

While there is no as-built information pertaining to the original construction of the dikes and dam embankments, materials used in the original construction were likely sourced locally. Erosion has occurred along the banks of the Ninepipe Feeder and G Canals resulting in multiple low spots, but soils in the Project Area are generally stable. Recent explorations have discovered an organic topsoil layer at the foundation contact as well as silty stratus throughout the foundation. These layers likely provide a seepage path through the embankment, as indicated by the presence of sand boils in the G Canal Lateral as far as 200 feet downstream of the existing weir within the canal.

Table 3. Soil types in the Kicking Horse Reservoir vicinity.

Soil Type	Acres in AOI	Percent of AOI
Bohnlly silt loam, 0 to 2 percent slopes	31	1.00%
Connah cobbly silt loam, 4 to 8 percent slopes	28.9	0.90%
Connah silt loam, 0 to 2 percent slopes	9.7	0.30%
Connah-Water complex, 2 to 4 percent slopes	84.7	2.70%
McDonald cobbly silty clay loam, 2 to 4 percent slopes	408.6	13.20%
McDonald cobbly silty clay loam, 4 to 8 percent slopes	119.1	3.90%
McDonald silty clay loam, 0 to 2 percent slopes	26.7	0.90%
Post silt loam, 0 to 2 percent slopes	68.7	2.20%
Post silty clay loam, 2 to 4 percent slopes	43.1	1.40%
Post-Ronan-Water complex, 2 to 8 percent slopes	1,369.70	44.40%
Post-Ronan-Water complex, 8 to 15 percent slopes	219.4	7.10%

5.1.2.2 No Action Environmental Impacts

Under the No Action Alternative soil conditions would remain as they are and there would be no excavations of the untilled native prairie soils. The downstream canals may continue to experience erosion, resulting in the perpetuation of low spots and changes to the existing contours. Soil erosion would continue to persist throughout the dam foundation, perpetuating the risk of embankment failure.

5.1.2.3 Proposed Action Environmental Impacts

Impacts to soils associated from the Proposed Action would range from minor to substantial in the long-term and would be associated with the excavation of the borrow area, access bridge, access roads, and downstream canals. Temporarily disturbed areas would be expected to return to pre-construction conditions after reclamation and reseeding. Minor to moderate but permanent impacts to soils within the original dam construction footprint are expected to occur, and would successfully address erosion issues, eliminating seepage paths associated with silty stratus and topsoil layers within the foundation. These impacts would not be expected to require mitigation. Outside of the original dam construction footprint, however, permanent impacts would occur to native untilled soils. Actions to offset these impacts are discussed in Sections 5.7.3.3 and 5.9

As part of construction, road material would be added for the raising of dikes and for the access road improvements. Topsoil would be stripped along the embankment during construction and would be replaced and reseeded post-construction. Contractor use areas would result in temporary and permanent impacts to soils (as described in section 4.3.4), and would be regraded and reseeded post-construction.

Excavations of up to 28,000 cubic feet would occur in the Borrow Area to provide material for the reconstruction of the dam and outlet works. Materials would be stockpiled on top of a geo-textile mat in a designated area within the borrow area to protect native soils. The borrow pit would remain a permanent depression. However, the exact depths and contours that would exist post construction are dependent on the amount of material excavated. Therefore, the area would be regraded and revegetated for the purposes of creating either a wetland or an upland habitat, depending on post-construction conditions, whichever supports a higher functional habitat value.

5.2 Water Resources

5.2.1 Surface Water Quality

5.2.1.1 Affected Environment

Kicking Horse Reservoir is fed by two canals: South Crow Feeder which diverts flows from South Crow Creek, and Kicking Horse Feeder which diverts flows from Post Creek (Figure 1). These streams originate in the Mission Mountains, thus canal inputs are relatively cold. However, the shallow reservoir has a large surface area-to-volume ratio so water temperatures are higher than that of nearby streams and mountain reservoirs.

The Ninepipe Feeder Canal and the G Canal Lateral, which exit from the south of the reservoir, supply the Charlo and Moiese Irrigation Service areas. Ninepipe Feeder Canal flows into a small pond (Octabeck Pond) before reaching the A Canal and Ninepipe Reservoir. The G Canal connects with the F Canal via the D Canal. Both pathways terminate in the Hillside Reservoir through an elaborate canal system (Figure 6).

Irrigation water currently flows through the Moiese and Charlo irrigation service areas through lands heavily dominated by cattle ranching and farming. Eventually, some irrigation tailwater enters Mission Creek from the Moiese Wasteway, Coleman Coulee, and from small laterals downstream of the F Canal. A portion of the water coming down Moiese Wasteway and Coleman Coulee is filtered through a series of constructed wetland treatments cells before entering the stream, but the majority of the water entering is unfiltered and poses a water quality threat. The reservoir and canals are classified as B-1 waterbodies by CSKT Water Quality Standards through this eventual, though distant and indirect, surface water connection with Mission Creek (Confederated Salish & Kootenai Tribes 2023).

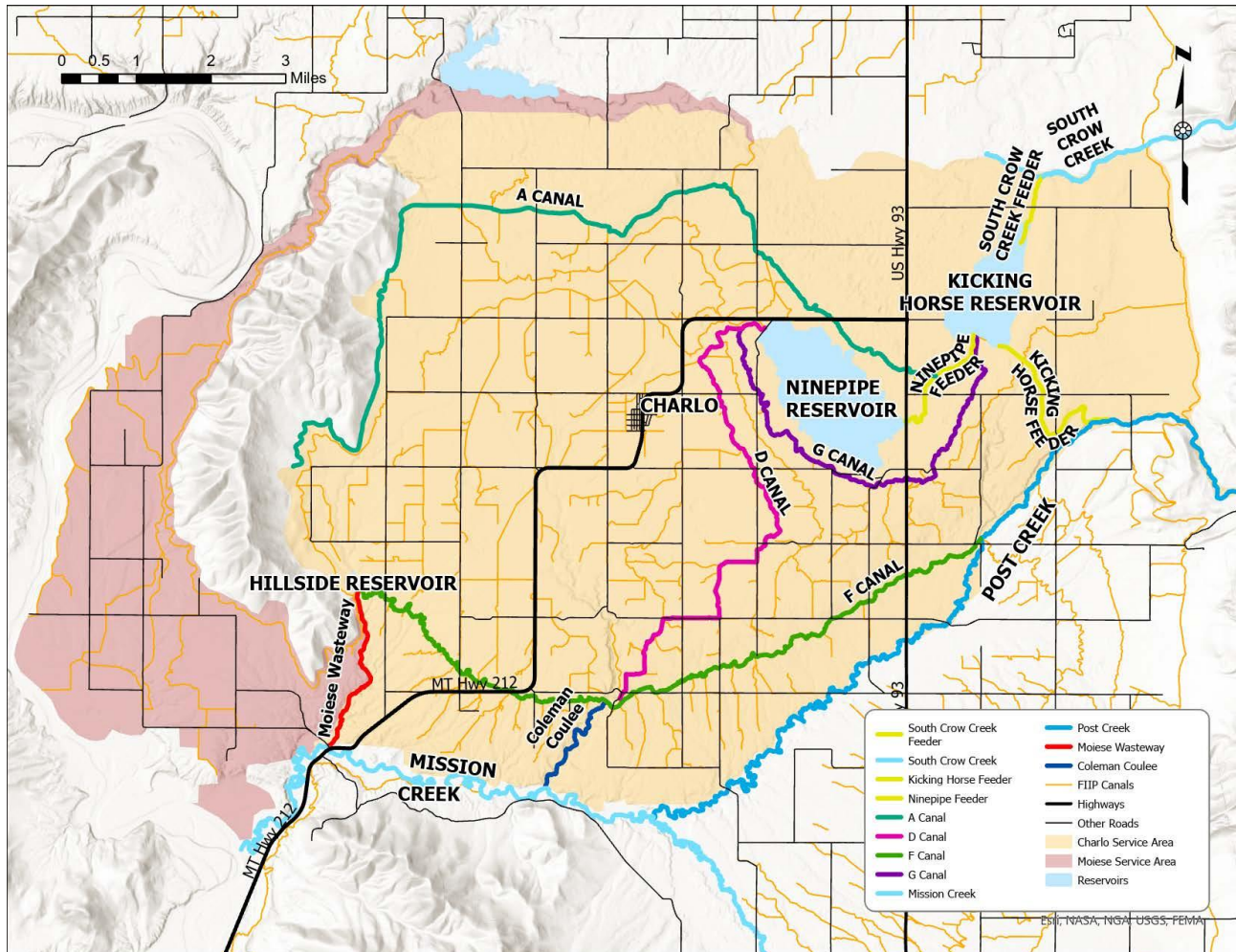


Figure 6. Water connectivity from Kicking Horse Reservoir to Mission Creek.

5.2.1.2 No Action Environmental Impacts

Under the No Action Alternative, additional reservoir restrictions would likely be implemented in the long-term in order to reduce the likelihood of dam failure. This would cause reservoir waters to become increasingly shallow, negatively impacting water quality during the irrigation season when the reservoir is filled.

In the case of a dam breach, significant downstream impacts could occur. In a 2013 Comprehensive Dam Review and a 2022 Emergency Action Plan, data showed that a hydrologic breach of the dam could trigger failure modes at the Ninepipe and Crow dams, resulting in subsequent overtopping that could transport water and sediment further downstream to Mission Creek and the Flathead River as well as other smaller downstream waterways. Substantial sediment transport from dam breach and/or overtopping would reach downstream waterways, and additional impacts could occur such as bank erosion and washouts of canals and streams. Restoration in response to the damage caused by these scenarios could be extensive and complicated to implement (Bureau of Reclamation 2013).

5.2.1.3 Proposed Action Environmental Impacts

Impacts to water quality as part of the Proposed Action Alternative are expected to be short-term and minor and would be associated with unwatering operations during construction. The reservoir would be drawn down as part of normal operations and then would be allowed to drain to the maximum extent prior to the excavation of the outlet works. A cofferdam would then be placed to isolate the outlet works on the upstream side of the dam for construction. Water that enters the work area would need to be pumped into the Ninepipe Feeder Canal in order to maintain dry working conditions, and would continue to be pumped as needed in the case of additional seepage or stormwater. Cofferdams placed downstream of both the South Crow and Kicking Horse at Post Creek Headworks would keep any water seeping through the headworks structures from passing through the canals and entering the reservoir downstream. This would minimize the need to pump water from around the cofferdam by reducing the amount of water entering the reservoir during construction.

From July to September of year two water would be checked up by a cofferdam in the Kicking Horse Feeder Canal near its connection with the reservoir and pumped into three bypass pipes that would discharge into the Ninepipe Feeder Canal and G Canal to meet irrigation needs from A Canal and G Canal. Erosion control measures would be employed within the Ninepipe Canal downstream to mitigate for any potential sedimentation and turbidity within the canal. If turbid water persists downstream of erosion control measures, the sediment would most likely settle in the Octabeck Pond before traveling further downstream. Turbidity is unlikely to occur with the implementation of required BMPs. However, any turbid water that may exist below BMPs is expected to settle prior to entering downstream waterbodies (see section 4.3.6)

5.2.2 Surface Water Rights and Water Use

5.2.2.1 Affected Environment

The full pool elevation at the Kicking Horse Reservoir (prior to the reservoir restriction) supplies approximately 8,000 af to the irrigation community. This is logic that is embedded into the CSKT-Montana water rights settlement and the allocation of water between Tribal time immemorial instream flows and irrigation diversion allowances. Due to the historic overallocation of water on the Reservation for reasons such as compensating for seepage loss or inefficiencies associated with FIIP infrastructure, the loss of 1,554 acre-feet of water as a result of the current reservoir restriction is consequential.

Terms for instream flow schedules become enforceable for the Mission South area (Post Creek and South Crow Creek) on September 17th, 2026 and for the Mission North area (Crow Creek and north) on September 17, 2028. On these dates, Minimum Enforceable Flows (MEFs) must be met and RDAs will be enforceable

per the stipulations for wet, normal, and dry years. The instream flows that serve as a source to the reservoir will increase starting in the fall of 2026 and are senior in priority to the irrigation diversion allowances, which total to a water right allowance of approximately 28,500 af for 27,000 irrigated acres. This allowance assumed that the reservoir can be operated to full pool, meaning the current water balance is a deficit irrigation condition without the restoration to TAC. The CSKT also retains a minimum enforceable reservoir pool elevation for protection of the fishery. However, this pool elevation is superseded by the need to address dam safety issues.

5.2.2.3 Proposed Action Environmental Impacts

Concerns over managing water during the Project chiefly relate to the period of construction for the outlet works, at which point the reservoir will be dewatered. Operations and construction elements, constraints on the water supply, and management solutions for this period of construction are outlined below and can be visualized in Table 4. Figure 6 in section 5.2.1 can be referred to for a further understanding of water movement through the Moeise and Charlo irrigation service areas.

Outlet Works Construction and First Fill Criteria

1. For the construction of the outlet works (July 2028 two through May 2029), the reservoir would be drawn down by July at which point a cofferdam would be placed to preclude water from entering the reservoir via South Crow Feeder. The reservoir would then be dewatered via pumping and would remain dewatered until the construction of the outlet works is complete.
2. In preparation, Ninepipe reservoir would need to be drawn to a lower elevation in 2028 in order to receive water drained from Kicking Horse Reservoir (approximately 3,000 acre-feet).
3. Following the construction of the outlet works, a performance evaluation (first fill criteria) would occur to ensure the newly built sections of the dam are safe to operate. The evaluation, based on historical first fill criteria, may consist of limiting water elevation rise to one foot per day from an established elevation and then holding the reservoir at full pool for potentially 30 days. After the first fill criteria are met, the reservoir restriction would be lifted and FIIP operations would be able to proceed as normal. In the case that the infrastructure does not function properly or there is not sufficient water supply to fill the reservoir, stored water would be released downstream and modifications and additional testing would be implemented. First fill criteria testing would then be postponed and finalized prior to the following irrigation season (2030). These operations would be expected to have no impact on irrigation deliveries, as water would be able to be diverted to and from the reservoir while being held at full pool elevation.

Water Constraints During Construction

During the outlet works construction from July 15th to September 15th, irrigation deliveries would be bypassed via pipe from Kicking Horse Feeder canal to satisfy irrigation demands along the G Canal and Ninepipe Feeder canals. Historical inputs from Kicking Horse Feeder are variable but on occasion have the ability to exceed the average. This indicates that more water may be available through bypass operations during the reservoir drawdown period. However, normal operating amounts were used to calculate expected water inputs to the irrigation supply from Kicking Horse Feeder canal. Additional supplements from Kicking Horse Feeder into Ninepipe Reservoir would be limited to the capacity of the bypass pumping infrastructure (85cfs).

However, inputs from South Crow Feeder would not be able to occur during this time which, based on historical data, typically provide the reservoir with approximately 5,200 to 7,800 acre-feet per year from mid-April to early-September, with most of the water being diverted May to July. The loss of irrigation inputs to Kicking Horse reservoir would result in a shortage downstream in Ninepipe reservoir from July 2028 until May 2029 when the Kicking Horse Reservoir is fully operational again. During first fill criteria testing (even if re-testing is necessary prior to the following irrigation season), diversions from South Crow Creek would be able to occur. Minimum Enforceable Flows (MEFs) become effective in South Crow Creek in 2029 as well, placing additional constraints on this water supply. Post Creek in-stream flows would be maintained throughout construction.

Alternative Water Management Solutions

1. The primary means of supplementing water during the outlet works construction and testing would be through the operation of the Crow Pumping Plant (CPP). CPP infrastructure currently exists but has not been operational for several years. However, the replacement of the existing facility will be completed prior to the construction of the Kicking Horse Project. Although CPP is being constructed with a 40 cfs maximum pump rate, there is variability in source water availability at the pumping plant, especially during freezing conditions in the canals or during a stressed water year. For this reason, a pumping estimate of 20 cfs is projected as the reliable estimate of CPP production from March through November. At this rate (considering historical gage data in South Crow Creek), CPP would be able to compensate for the shortages at South Crow Feeder during the outlet works construction while meeting MEFs.
2. As an added consideration, storage restrictions at Crow reservoir have been lifted due to the replacement of the Crow Dam spillway and the subsequent first fill to TAC in 2023. From approximately 2008 to 2023 Crow Reservoir had been placed under a reservoir level restriction that kept storage of the reservoir under 1,000 acre-feet versus the potential full pool amount of approximately 10,000 acre-feet. To accommodate for restrictions at Crow Dam (during a normal water year), approximately 4,700 acre-feet of water was historically held back in the Mission and McDonald reservoirs for late season irrigation needs in the Moeise Valley. The lifting of this restriction allows this water to be available during the construction of the Project in both 2028 and 2029. The additional water from Mission and McDonald could be routed via Crow Creek and sent to Ninepipe Reservoir or down A Canal via CPP. This water could also be routed via Post Creek and bypassed through the Kicking Horse Feeder bypass system, which then could be managed downstream as appropriate in the A, G and Ninepipe canals, as needed.

Summary

During the construction of the outlet works (July 2028 through May 2029), flows from South Crow Creek would not be routed into Kicking Horse Reservoir via the South Crow Feeder canal, resulting in a projected shortage in the Ninepipe Reservoir of up to 7,800 acre-feet during 2029. Ninepipe Reservoir would be held at a lower elevation prior to the start of the outlet works construction in order to receive water drained and pumped from Kicking Horse Reservoir and would operate under full pool conditions going into 2029. Inputs from Kicking Horse Feeder canal would be augmented through bypass pumping into Post G and Ninepipe Feeder canals.

To account for the shortages from South Crow Feeder supplemental storage in the Mission and McDonald reservoirs and pumping at the Crow Pumping Plant would provide flexibility in water supply

and management during this time. These alternative methods are expected to compensate lost irrigation flows during years two and three of construction while taking into consideration increased MEFs in South Crow Creek. However, these solutions are highly dependent on the water year. Under dry conditions or in the event of additional unforeseen constraints, it may be necessary for irrigators to plan for shortages in the irrigation water supply. Close coordination between FIIP, DEWR and the Project manager would be necessary to adapt to changing conditions and manage water appropriately. Due to the complexity of water management solutions and variability in conditions from year to year, the project is expected to have short term, moderate impacts to surface water quantity, rights which may require adaptive management during construction.

Table 4. Water deficits and supplementations during KHD Outlet Works construction.

Phase	Construction Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Water Supplementations During OW Construction	CPP supplemental flows												
	Hold back 4,700 acre-ft (collectively) in Mission and McDonald reservoirs (2028-2029)												
Year 2 (2028)	Draw down Ninepipe Reservoir to receive KHD drawdown												
	Place cofferdam below South Crow Feeder Headworks (5,200-7,800 acre-feet deficit)												
	Kicking Horse Reservoir Drawdown*												
	Reservoir dewater period for outlet works construction**												
	Bypass pumping from KH Feeder	install											
Year 3 (2029)	Kicking Horse Reservoir dewater period cont.												
	Remove cofferdam below South Crow Feeder Headworks												
	Bypass pumping cont.												
	First Fill Criteria testing ***												

Constraints to the water supply (shown in orange) are associated with the closure of irrigation diversions at the South Crow Feeder Headworks and the dewatering of the Kicking Horse Reservoir.

*Full pool elevation in Kicking Horse Reservoir is typically achieved in June. Diversions from South Crow Creek would occur until July when the cofferdam is placed and can be considered inputs to the water supply (blue) up until this point.

**Though water is distributed to the irrigation service area during the period of reservoir drawdown, Ninepipe Reservoir will have already been reduced so this action can be considered a constraint to the water supply.

***Kicking Horse Reservoir would be allowed to fill to full pool elevation during the first fill criteria testing (including inflows from South Crow Creek) and irrigation operations can return to normal once met.

5.2.3 Waters of the U.S. (WOTUS) and Tribal Waters Including Wetlands

5.2.3.1 Affected Environment

The Kicking Horse and South Crow feeder canals divert water from Post Creek and South Crow Creek (respectively). Additionally, an eventual surface water connection with Mission Creek exists via tailwater in the Coleman Coulee, Moeise Wasteway, and small laterals downstream of the F Canal, as described in section 5.2.1.1. The lands surrounding the reservoir are dominated by a high density pingo scar wetland habitat. Some of these wetlands are predominantly influenced by surface runoff, precipitation, and possibly groundwater. However, some wetlands at the downstream toe of the dam are presumed to be artificially-induced as indicated by the plant communities present as well as by evidence of seepage connections through the dam. A waste way between the two outlet canals carries occasional water to a series of wetlands downstream that eventually connect with the Ninepipe Reservoir approximately 1.5 mile downstream. 63.57 acres of wetlands and 101.57 acres of non-wetland aquatic resources were delineated in the Project Area (Wetland Delineation Report, attachment D). Delineated aquatic resources are summarized in Table 5 and shown in **Error! Reference source not found.**

The Kicking Horse Reservoir and appurtenant canals were considered jurisdictional by the United States Army Corps of Engineers (USACE) in an Approved Jurisdictional Determination completed in August, 2025 (Attachment E). Therefore, these waters are regulated under the Clean Water Act (CWA) Sections 401 and 404.

Additionally, the CSKT Shoreline Protection Office assumes jurisdiction over impacts to the bed and banks of non-wholly manmade waters. Therefore, it is anticipated that the Kicking Horse reservoir and appurtenant canals would not be regulated under the Aquatic Lands Conservation Ordinance 87A (ALCO). However, regulatory review of the proposed project would ultimately determine what waters and wetlands would be regulated within the Project Area, and natural wetland features would be expected to require permitting and mitigation.

Table 5. Aquatic Resources delineated in the Project Area.

Aquatic Resource Type *	Area (acres)	Length (ft)
Non-Wetland Aquatic Resources		
<i>Kicking Horse Reservoir (Lacustrine)</i>	97.72	N/A
<i>Kicking Horse Feeder Canal (RUB*)</i>	0.63	1,400
<i>Ninepipe Feeder Canal (RUB)</i>	1.68	1,690
<i>South Crow Feeder Canal (RUB)</i>	1.21	1,420
<i>G Canal (RUB)</i>	0.33	1,750
Totals of non-wetland aquatic resources	101.57	6,260
Wetlands		
<i>PEM Wetlands</i>	55.86	
<i>PAB Wetlands</i>	5.59	
<i>PABx Wetlands</i>	2.12	
Total area of wetlands	63.57	N/A
Total Area of Aquatic Resources	165.14	N/A

* RUB – Riverine Unconsolidated Bed, PEM – Palustrine
Emergent Wetland, PAB – Palustrine Aquatic Bed, PABx
– modified (excavated)

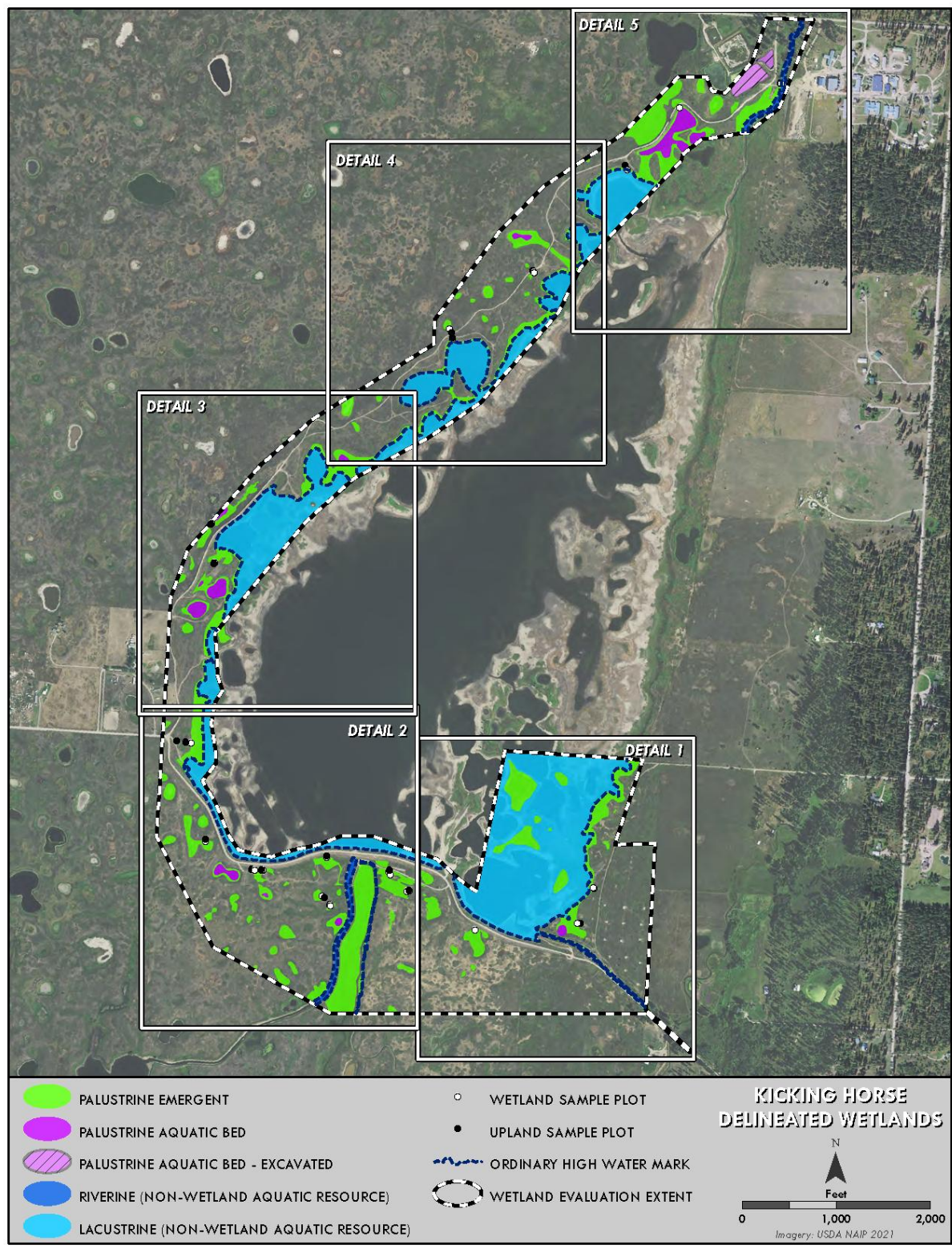


Figure 7. Delineated wetlands by type within the Project Area

5.2.3.2 No Action Environmental Impacts

Future activities to provide maintenance to or address failure risks associated with the dam are uncertain beyond implementing additional reservoir restrictions, therefore are not analyzed in this Environmental Assessment. However, the 2020 Risk Reduction Analysis indicated that alternatives to address seepage and potential failure would likely also entail significant earthwork activity and inevitable relocation of the G Canal. Additionally, FIIP operators would continue to access downstream infrastructure via an underdeveloped road, risking impacts to wetland habitat downstream of the dam. Thus, impacts to WOTUS and wetlands cannot be accurately determined under the No Action Alternative but may occur as a result of future activity.

5.2.3.3 Proposed Action Environmental Impacts

Anticipated impacts (temporary and permanent) to WOTUS and wetlands are summarized in Table 6 and are shown in Figure 8. Permanent fill impacts are expected to require compensatory mitigation which would be quantified through the permitting processes of CWA Section 404 and ALCO 87A and would be mitigated for at the Crow Wetland Mitigation Reserve (see Section 5.9). Some wetlands and waters would be permanently filled due to the increased footprint of the cutoff wall, toe drain, access roads, and improvements to downstream infrastructure. Additionally, indirect impacts to some wetlands presumed to be fed by seepage through the dam may occur, as seepage would be cut off as part of the Project. Contractor use areas would utilize geotextile matting before placing fill in wetlands, which would be removed post-project to allow for the restoration and revegetation of these features.

Avoidance and minimization of impacts to wetlands and waters was carefully considered throughout the design process and was informed by the identification of priority (high functioning) wetlands, as shown in **Error! Reference source not found.** Ultimately, collaboration with CSKT resource specialists resulted in significant modifications to early design which resulted from an overall reduction in the project footprint and by adjusting boundaries and accepting recommendations for construction that would result in only temporary impacts to certain wetlands and waters wherever possible. These temporary impacts would be expected to return to pre-construction conditions post-project. All avoidable wetlands would be staked and flagged prior to construction, and areas of temporary impact would be reshaped and reseeded to the specifications of CSKT resource staff. Additionally, the borrow area would be transformed into a wetland feature which mimics that of the surrounding wetlands should excavations result in conditions that allow such a feature to function as successful wetland habitat.

Table 6. Aquatic Resource Impacts from the Proposed Project

Aquatic Resource Type	Acres of Impact
Permanent	4.11
PEM	3.82
RUB	0.29
Temporary	3.42
Lacustrine	1.37
PEM	1.55
RUB	0.50
Grand Total	7.53

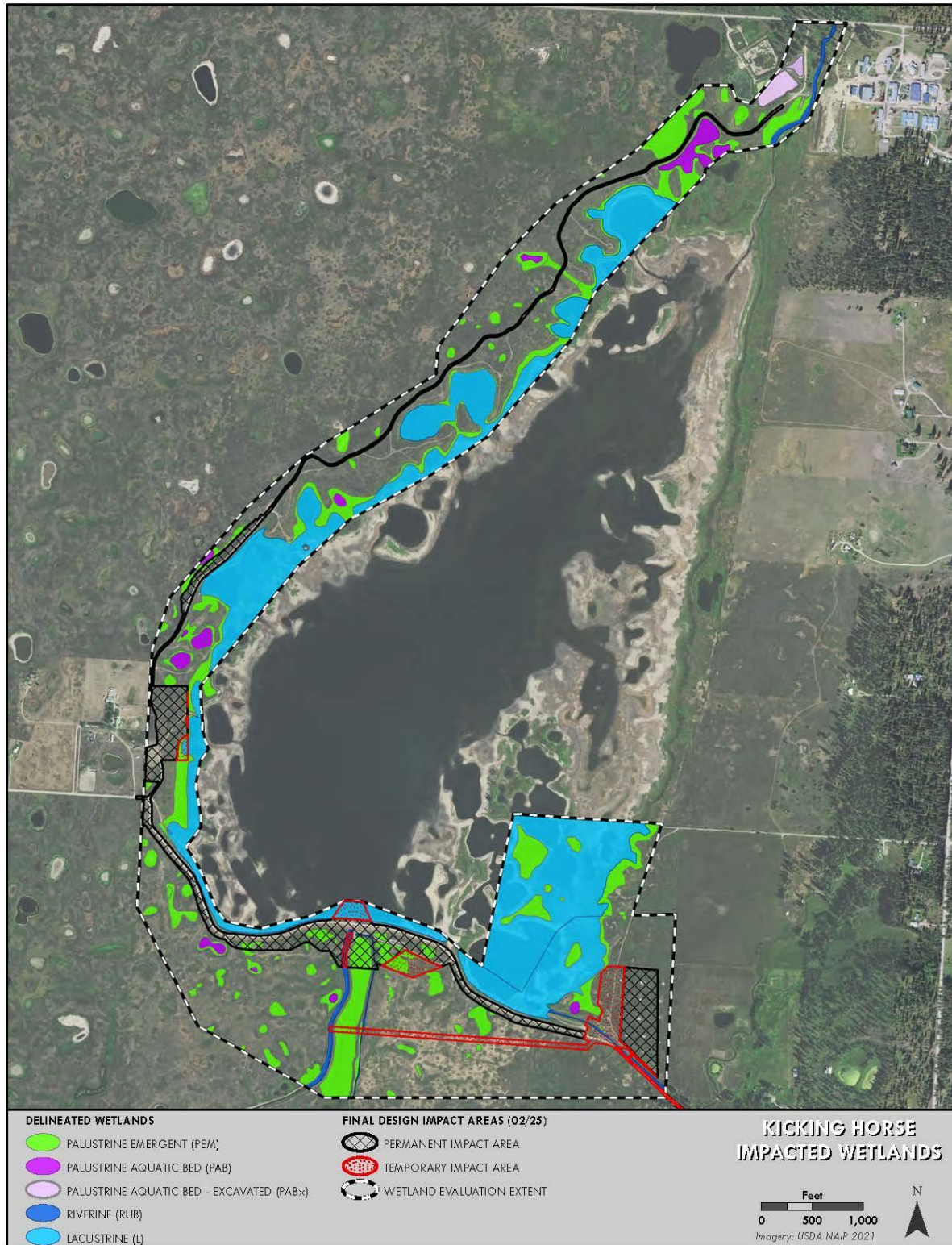


Figure 8. Temporary and permanent impacts in the Kicking Horse Dam Project area.

5.3 Air Quality

5.3.1 Affected Environment

Pursuant to requirements of the Clean Air Act (CAA; 42 U.S.C 7401 et seq), the U.S. EPA has established health-based National Ambient Air Quality Standards (NAAQS) for six pollutants considered harmful to public health and the environment, including carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. The closest Montana Department of Environmental Quality air monitoring station is located at Ronan City Park, to the north of the Project area. In 1987, two non-attainment locations were designated in Lake County (Ronan and Polson) for particulate matter (PM10) pollutants identified under the NAAQS (U.S. Environmental Protection Agency). However, modeling on projects of this size typically does not occur and de minimis emissions levels for comparison do not exist (Randall Ashley, personal communication 2025).

Sources of air quality pollutants within the Project vicinity are predominately associated with highway traffic on US Highway 93, dust from vehicle traffic on Kicking Horse Dam Rd., smoke from regional wildfires and prescribed burning. The land surrounding the Project Area is dominated by open ranchland, dispersed residences, and natural areas such as the Ninepipe Wildlife Refuge. Open burning of brush piles, and smoke from wood stoves may also be a source of air quality pollutants from residential areas.

5.3.2 No Action Environmental Impacts

Air quality conditions would not change as a result of the No Action Alternative.

5.3.3 Proposed Action Environmental Impacts

With the construction of the Proposed Action, increased traffic would occur on Kicking Horse Dam Rd. and the area surrounding the dam. This would cause a temporary increase in an increase in Particulate Matter (PM) PM10 pollutants associated with fugitive dust, and pollutants such as PM2.5 pollutants, nitrogen dioxide, and carbon monoxide associated with vehicle emissions. The concrete batch plant would also emit concrete dust while in use. These emissions would occur during construction (or during specific construction activities) which would persist over the course of multiple years as the Project is implemented. However, with the implementation of BMPs such as requiring vehicles to comply with emissions standards, revegetating bare soils as soon as possible after construction, and wetting access roads as needed during construction, impacts to air quality would be minor and short-term during the course of construction.

5.4 Living Resources

5.4.1 General Fish and Wildlife

5.4.1.1 Affected Environment

Fish and Other Aquatic Species

The warm, well-lit shallows of the impoundment support an abundance of submerged and emergent aquatic vegetation. These conditions in turn provide habitat for a diverse fish assemblage comprising cold water, cool water, and warm water native and introduced species. Native fishes sampled in the reservoir include two species of cyprinids (Longnose Dace [*Rhinichthys cataractae*], and Redside Shiner [*Richardsonius balteatus*]), one catostomid (Longnose Sucker [*Catostomus catostomus*]), one salmonid (Westslope Cutthroat Trout

[*Oncorhynchus lewisi*]), and at least one species of cottid (*Cottus* spp.). Introduced fishes include two Ictalurids (Black Bullhead [*Ameiurus melas*] and Yellow Bullhead [*A. natalis*]), an Esocid (Northern Pike [*Esox lucius*]), three salmonids (Brook Trout [*Salvelinus fontinalis*], Brown Trout [*Salmo trutta*], and Rainbow Trout [*O. mykiss*]), four centrarchids (crappie [*Pomoxis* spp.], Largemouth Bass [*Micropterus salmoides*], Smallmouth Bass [*M. dolomieu*] and Pumpkinseed [*Lepomis gibbosus*]), and one percid (Yellow Perch [*Perca flavescens*]).

The multi-tiered fishery is almost entirely based on self-sustaining populations of introduced warm water and cool water fishes, but the reservoir has also typically received annual stockings of Rainbow Trout. Historically the major species located in the reservoir were Largemouth Bass, Pumpkinseed, and Yellow Perch. Brook Trout, Rainbow Trout and Black Bullheads have also been recorded in smaller proportions during harvests. More recently, however, Northern Pike, Smallmouth Bass, and Crappie were illegally introduced and now also contribute to the fishery.

The CSKT have managed the Kicking Horse Reservoir fishery since the CSKT Fisheries Program was established in the mid-1980s. Fisheries management goals are primarily directed at providing a quality Largemouth Bass fishery. Although the main purpose of the reservoir is irrigation storage and delivery, the CSKT retains a minimum enforceable reservoir pool elevation for protection of the fishery. However, this pool elevation is superseded by the need to address dam safety issues.

Terrestrial Wildlife

The Kicking Horse area is regularly disturbed through human recreational use, particularly fishing and boating. Nonetheless, the area provides habitat for many wildlife species that depend on grassland, wetland, and emergent marsh habitats, which are described in section 5.4.1. Much of this habitat lies within mitigation lands, established to help alleviate ecological damages resulting from the operation of the SKQ Dam. Because much of the surrounding land is used for agriculture, this area contains important remnant wildlife habitat.

Smaller mammals such as the western pygmy shrew (*Sorex eximius*), meadow voles (*Microtus pennsylvanicus*), American mink (*Neogale vison*), North American porcupine (*Erethizon dorsatum*), and the long-tailed weasel (*Mustela frenata*) have been documented in the area. Several bat species are known to use the area, including little brown myotis (*Myotis lucifugus*), Townsend's big-eared bat (*Corynorhinus townsendii*), Fringed myotis (*Myotis thysanodes*), and hoary bat (*Lasiurus cinereus*). Larger mammals common in the vicinity include white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), grizzly bear (*Ursus arctos horribilis*), and elk (*Cervus canadensis*). The monarch butterfly (*Danaus plexippus*), western skink (*Plestiodon skiltonianus*), Columbia spotted frog (*Rana luteiventris*), and western toad (*Anaxyrus boreas*) may also be found in the region (MTNHP 2024). The reservoir itself provides poor habitat for wildlife, as water levels are artificially maintained and lowered at a rapid rate during irrigation season, limiting the utility of the reservoir as nesting habitat for species such as the common loon (*Gavia immer*).

5.4.1.2 No Action Environmental Impacts

Fish and Other Aquatic Species

Under the no action alternative there would be no loss of the fishery from reservoir dewatering but existing reservoir fill restrictions would remain and could even become more restrictive. The fill restrictions currently exclude availability of shallow habitats that would be inundated between the restricted pool elevation (3060.5') and the full operating pool (3063'). This elevational interval covers a large expanse of shallow habitat with a

very high surface area to volume ratio. The full operating pool would only be available if the proposed construction were completed. The warm, shallow, productive habitats that would be available within the restricted operating interval are very important to small-bodied fishes of most cool and warmwater species, and also for spawning Largemouth Bass.

In the absence of dewatering, there would also be no prospect for removal of unwanted and illegally introduced nonnative fishes. In contrast, dewatering the reservoir under the proposed action would provide an opportunity to remove unwanted and illegally introduced fishes. Northern Pike, Smallmouth Bass and crappie were all illegally introduced to the reservoir, and bullheads are undesirable and not a managed species. Northern Pike are especially piscivorous and can greatly restructure a fish assemblage and a fishery through predation and competition. Crappie, too, can restructure fish assemblages. They currently have a very limited distribution in western Montana but could spread to downstream areas from Kicking Horse Reservoir. In addition, Kicking Horse Reservoir could serve as a source for further illegal introductions.

Terrestrial Wildlife

Under the No Action Alternative, no construction activities would occur to impact wildlife species or habitat over the short- or long-term. However, if dam failure were to occur, it is uncertain the degree to which wildlife habitat would be impacted by flooding, and whether negative effects would be short- or long-term.

5.4.1.3 Proposed Action Environmental Impacts

Fish and Other Aquatic Species

Under the Proposed Action, Kicking Horse Reservoir would be drawn down to the outlet structure's invert elevation (~3039') to facilitate the proposed dam safety work. Drawdown would begin at the end of July of year two and the reservoir would remain dewatered through the following May. Based on recently updated bathymetry, this level of drawdown would result in a near complete dewatering of the reservoir, leaving only a series of small, isolated pools in pothole features that existed prior to dam construction (Figure 1). The two deepest features (with potential depths ranging up to 6-7 feet) are located closest to the dam face. It is uncertain if, and to what degree, these features would retain water and provide suitable physicochemical conditions for survival of fish through the period of reservoir drawdown and dam safety work. Even if conditions were to remain suitable for some fish survival, the residual isolated pools would only retain a small fraction of total reservoir volume and the existing fish assemblage. Thus, it is expected that reservoir drawdown would result in a near total loss of a popular subsistence and recreational fishery.

Recovery of the fishery following drawdown would take multiple years. For example, Largemouth Bass are relatively slow-growing in this system, with females generally not maturing until at least age-5. This is roughly the same age of a stock-sized fish (the minimum size of fish commonly needed to provide recreational or subsistence value). A preferred-size Largemouth Bass, one that is 15" long (380 mm), is roughly nine years old in Kicking Horse Reservoir. This gives some indication of the lengthy recovery timeline for the fishery. To restart the fishery, electrofishing and transporting multiple size- and age-classes of fishes (Largemouth Bass and other species) from nearby Ninepipe Reservoir or the Octabeck Pond (located just downstream of the reservoir) to Kicking Horse Reservoir could occur. However, it would take several spawning and growing seasons, and thus substantial time, to restore the existing fishery.

Although the proposed action would result in reservoir dewatering and loss of the current fishery, it would also provide an opportunity to remove unwanted and illegally introduced fishes from the reservoir. This would be facilitated by reservoir drawdown and concentration of fishes in isolated pools that might remain following drawdown. This remaining standing water could be treated with a piscicide if product (rotenone) and qualified applicators were available (there is currently a worldwide shortage of rotenone), or by mechanical removal. Rotenone is short-lived in the aquatic system and does not have cascading effects to other species, such as predatory birds that may ingest the fish after application (Craig Barfoot, personal communication 2026).

For these reasons, long-term moderate impacts to fish and other aquatic species are expected from the Proposed Action, and beneficial impacts would be associated with the control of invasive species if action is taken.

Terrestrial Wildlife

Under the Proposed Action Alternative, direct and indirect effects to non-listed, terrestrial wildlife species would be short-term and minor. Wildlife would be temporarily displaced from the Project Area and would experience some temporary and some permanent loss of habitat. The Project Area is approximately 50 acres in size and all effects other than noise would be localized to the project area, however light may be visible from further away during the winter months when days are shorter and construction activities may occur temporarily outside of daylight hours. Permanent and temporary impacts to wetland habitat are outline in Table 6. The Project would also result in the permanent loss of 28.59 acres of upland habitat associated with excavation activities and the extended permanent footprint of the dam face. Temporary impacts to 7.52 acres of upland habitat would occur due to activities such as staging equipment and materials. The borrow area (7.7 ac; +2.7 ac if needed) and the contractor use areas (8.11 ac) would be temporarily disturbed but restored to native grassland or wetland habitat post-construction. Most actions would occur on or within existing roads and dam/outlet works infrastructure. Expansion of the outlet works and associated canal infrastructure would result in permanent loss of 0.514 acres of habitat, but this loss would occur directly adjacent to existing infrastructure. Noise impacts during construction may cause some wildlife to avoid using habitats near the vicinity. The project area is small in extent and surrounding habitat is available for mobile species. Therefore, noise effects to wildlife should be of minor consequence. Short-term effects would last for the duration of construction, and no other federal or non-federal major construction activities are planned within the Project Area during this time.

5.4.2 Threatened and Endangered Species

5.4.2.1 Affected Environment

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database was reviewed in 2024 to identify threatened and endangered species that may occur within the project area and/or vicinity. Additional information about listed species was obtained from CSKT Biologist, Amber Swicegood. Four species, all listed as threatened, were identified as potentially occurring within the project area. Grizzly bear (*Ursus arctos horribilis*) are present in the project area; Canada lynx (*Lynx canadensis*), North American wolverine (*Gulo gulo luscus*), and yellow-billed cuckoo (*Coccyzus americanus*) are unlikely to occur within the project area. A full description of the threatened and endangered species analysis is found in the Biological Assessment (Attachment B). The USFWS provided a Letter of Concurrence in November, 2024, completing consultation under Section 7 of the Endangered Species Act.

On February 16th, 2026 reinitiation of Section 7 of the Endangered Species Act was requested to include the newly proposed species of pollinators, the monarch butterfly and the Suckley's cuckoo bumblebee. The update included a "not likely to jeopardize the continued existence of" both species.

5.4.2.2 No Action Environmental Impacts

Under the No Action Alternative, there would be no construction activities that would impact threatened and endangered species or their designated critical habitat over the short- or long-term. However, if dam failure were to occur, it is uncertain the degree to which habitat of listed species would be impacted by flooding and whether these effects would be short- or long-term.

5.4.2.3 Proposed Action Environmental Impacts

A Biological Assessment was completed by CSKT Wildlife Biologists in September, 2024 to comply with Section 7 of the ESA (Attachment B). In this BA, it was determined that the proposed Project would have No Effect on Canada lynx, North American wolverine, and yellow-billed cuckoo. The Project Area contains no habitat for lynx, wolverine, or yellow-billed cuckoo, and is below the elevational range for lynx and wolverine. Grizzly bears are known to occur in the Project Area, but the Proposed Action Alternative is likely to have minor, short-term impacts to individual grizzly bears. Therefore, the Project May Affect, but is Not Likely to Adversely Affect grizzly bear. Primary effects to grizzly bear would include noise, human disturbance/presence, temporary habitat disturbance, and potential human-bear conflicts. There is enough surrounding habitat that grizzly bears should be able to avoid the Action Area during construction, and a negligible amount of grizzly bear foraging habitat will be permanently impacted (0.514 ac due to expansion of the dam footprint). While noise may cause short-term shifts in bear movement behavior near the project area, this is likely to only affect a few individuals and impacts to the population will be minor. Following proper conservation measures detailed in the attached Biological Assessment will help prevent human-bear conflicts as they should prevent bears from being exposed to human attractants.

In response to the reinitiation request on February 16th, the USFWS concurred with the determinations stated within the reinitiation letter that the proposed project would not jeopardize the continued existence of both the monarch butterfly and the Suckley's cuckoo bumblebee and that the effects determinations made for the listed species in the 2024 consultation would remain the same. Correspondence for this reinitiation is provided in Attachment B.

5.4.3 Migratory Birds and Bald and Golden Eagles

5.4.3.1 Affected Environment

The Migratory Bird Treaty Act of 1918 (MBTA) implements four conservation treaties between the United States, Canada, Mexico, Japan, and Russia, and is intended to protect migratory bird species that naturally occur in the United States. The MBTA prohibits take (including killing, capturing, selling, trading, transporting, disturbing, possession of eggs/nests) of protected migratory bird species without prior authorization by the USFWS (16 U.S.C. 703-712). "Take" also includes the removal of vegetation containing active nests of protected species. Some protected migratory bird species that have been documented in the area include black tern (*Chlidonias niger*), great blue heron (*Ardea herodias*), trumpeter swan (*Cygnus buccinator*), Caspian tern (*Hydroprogne caspia*), common loon (*Gavia immer*), bald eagle (*Haliaeetus leucocephalus*), sora

(*Porzana carolina*), common yellowthroat (*Geothlypis trichas*), clay-colored sparrow (*Spizella pallida*), savannah sparrow (*Passerculus sandwichensis*), and Wilson's snipe (*Gallinago delicata*) (MTNHP 2024).

Additionally, the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668d) prohibits "take" of bald and golden eagles (*Aquila chrysaetos*), including feathers, eggs, and nests without a permit from the USFWS. The BGEPA defines "take" as "pursue, shoot, poison, wound, kill, trap, collect, molest, or disturb." Regulations further define "disturb" as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6). The act also prohibits habitat alterations around a previously used nest site, even when eagles are not present.

According to CSKT data, no bald or golden eagle nests are documented near the project area. The nearest bald eagle nest is approximately 0.5 miles north of Mollman Pass Rd. from Kicking Horse Job Corps. Bald eagles may forage at the reservoir, and many waterbird species nest or forage in the vicinity during the summer months.

5.4.3.2 No Action Environmental Impacts

Under the No Action Alternative, there would be no construction activities that would impact migratory birds over the short- or long-term.

5.4.3.3 Proposed Action Environmental Impacts

Construction has the potential to impact active nests that may be present in the spring and summer months. This would include ground and shrub-nesting birds as well as those nesting at the edges of wetlands. Contractors would adhere to the conservation measures listed in 4.3.6 wherever practicable and would be required to coordinate with the CSKT Wildlife Program as necessary to minimize impacts to nesting birds. Furthermore, two existing gates would be relocated to the Canal Rd. on the west side of the reservoir once the project is complete. These gates would be closed during future waterbird nesting seasons to ensure that Canal road improvements would not lead to an increase in human recreational use of the area.

Reservoir draw down would adversely impact any nesting waterbirds during the draw down period (expected end of July-May; years 2–3 of construction). Beginning reservoir drawdown at the end of July should avoid impacts to most nesting birds, as this would occur at the end of the nesting season. Additionally, most waterbirds nest earlier in the season than do passerines, for which the active nesting period is established (Art Soukkala, personal communication, 2025). However, some ducks and other waterfowl species will be tending young on reservoir waters at the time and would be forced to move their young as draw down occurs. This could lead to increased mortality for young waterfowl, so pushing de-watering as late in the season as possible will best help mitigate adverse impacts to nesting waterbirds.

All construction activities related to the Project would occur outside the 0.5-mile buffer recommended for noise disturbance to nesting eagles (Amber Swicegood, personal communication, 2025), and therefore seasonal construction noise restrictions are not anticipated. As long as the conservation measures are implemented (avoid construction during bird nesting window, survey for nests prior to disturbance and avoid nest take), the Project should have short-term, minor adverse effects on migratory birds.

5.4.4 Vegetation and Invasive Weeds

5.4.4.1 Affected Environment

Vegetation types surrounding the Kicking Horse Reservoir consist of upland prairie and wetland plant communities. Upland prairie surrounding the reservoir represents the majority of native plant diversity once found across the reservation including western wheatgrass (*Pascopyrum smithii*), camas (*Camassia quamash*) Idaho fescue (*Festuca Idahoensis*), and rough fescue (*Festuca campestris*) (Art Soukkala, personal communication, 2025). Oregon checker-mallow (*Sidalcea oregana*), a Montana Plant Species of Greatest Conservation Need (GCN) has also been known to occur throughout the area (see section 5.8.1.1). Wetland habitat varies in functional value depending on the dominant plant community. Wetland fringe along the reservoir and some wetland features downstream of the dam are dominated by reed canarygrass (*Phalaris arundinacea*). Other wetland features, such as downstream of Dike No. 2 and the dam, host diverse native plant communities which include: bull rush species (*Schoenoplectus* spp), Blue-joint reedgrass (*Calamagrostis canadensis*), and Baltic rush (*Juncus balticus*).

White top (*Lepidium draba*), ventenata (*Ventenata dubia*), and spotted knapweed (*Centaurea stoebe*) are some of the dominant invasive plant species prevalent throughout the local area. Current efforts to manage white top via chemical applications occur and are managed by the CSKT Wildlife Program (Montana Department of Agriculture 2019).

Dominant land cover types surrounding Kicking Horse Reservoir include Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland; Rocky Mountain Lower Montane, Foothill, and Valley Grassland; and Rocky Mountain Dry-Mesic Montane Conifer Forest. Little tree or shrub vegetation is present immediately surrounding the reservoir, and nearby habitats include upland grassland with prairie pothole wetlands interspersed throughout. This ecologically sensitive area includes some of the last remaining untilled prairie soil in the Mission Valley, along with many glacially-created pingo scar wetlands. While the area supports a rich diversity of native grass and forb species it is also heavily dominated by invasive weeds (Art Soukkala, personal communication, 2025).

5.4.4.2 No Action Environmental Impacts

Under the No Action Alternative, ground disturbing activities such as excavation, clearing and grubbing would not occur. Existing vegetation communities would remain intact including both native and non-native species. The CSKT Wildlife Program manages noxious weeds at the Kicking Horse Reservoir and would continue to do so using current methods such as frequent, low intensity burns and chemical applications.

5.4.4.3 Proposed Action Environmental Impacts

Minor, short-term impacts to vegetation on the dam face would be associated with the installation of the cutoff wall and the contractor use areas. In these areas, vegetation would be stripped and topsoil would be removed except as otherwise indicated in section 4.3.4, *Contractor Use Areas*. During site stabilization, a layer of topsoil would be placed and the area would be reseeded with a CSKT approved seed mix.

Certain elements of the Project would result in substantial permanent impacts to upland and wetland vegetation due to an increase from the existing footprint of the Facility. These would include the construction of the toe drain, canal work, and excavation activity in the borrow area. In these areas, existing vegetation would be

permanently occupied by either excavation, fill, new infrastructure, or a completely different plant community (in the case of the borrow area).

All disturbed sites would be graded and seeded with a CSKT approved seed mix post construction with the exception of the borrow area, which would receive substantial revegetation efforts and would be dependent on the final surface elevations post-construction. Details on the borrow area restoration are shared in section 4.3.3 and site revegetation would be closely coordinated with the CSKT Wildlife Program to ensure the restored area functions as either an upland or wetland habitat and is representative of surrounding habitat qualities.

Contractors would be required to wash equipment prior entering the Project site in order to prevent the spread of invasive weeds to the area from other locations. Post-project, the site would be monitored for the presence of invasive species and would be managed during the revegetation period in disturbed locations before returning to the long-term management procedures carried out by the CSKT Wildlife Program.

5.5 Cultural Resources

5.5.1 Affected Environment

The National Historic Preservation Act (NHPA), as amended, 54 U.S.C. § 300101 et seq. defines historic properties as sites, buildings, structures, districts (including landscapes), and objects included in, or eligible for inclusion in the National Register of Historic Places (NRHP), as well as the artifacts, records, and remains related to such properties. Section 106 of the NHPA requires Federal agencies to duly consider the effects of their actions on NRHP-eligible properties. This analysis is carried out by the CSKT Preservation Department. The TPD does not consider FIIP infrastructure as eligible for listing under NRHP.

The CSKT Division of Engineering and Water Resources (DEWR) hosted an early onsite scoping visit which included the TPD Department Head Kevin Askan and Ksanka Culture Committee (KCC) Director Vernon Finley during the summer of 2021. The Proposed Action was presented to the Ksanka and Séliš-Qlispé Culture Committees (SQCC) at multiple stages during project design. During these interactions, the historical and present cultural importance of the Project Area was communicated to the Project team. The CSKT Preservation Department (TPD) in coordination with the Culture Committees conducted a careful review of the Project and its potential impacts. On August 6th, 2025, a Cultural Clearance letter was issued and is provided in Attachment C.

Coordination with the CSKT Preservation Department and Ksanka and Séliš-Qlispé Culture Committees occurred throughout project development:

- Interdisciplinary field review, Summer 2022
- Interdisciplinary Team project review, Summer 2024
- Ksanka Culture Committee meeting December 11th, 2024
- Joint Culture Committee (KCC and SQCC) meeting January 29th, 2025
- Séliš-Qlispé Culture Committee meeting February 11th, 2025
- Ksanka Culture Committee meeting February 12th, 2025

5.5.2 No Action Environmental Impacts

Ongoing impacts to cultural resources would continue to occur with the current dam still in place.

5.5.3 Proposed Action Environmental Impacts

The vicinity of the Kicking Horse Reservoir is of significant cultural importance to the Tribes and holds a history of traditional cultural practices and activities. The landscape is a source for the gathering of important cultural plants and hunting for Tribal members. Construction activities would directly and indirectly impact these values.

Under the Proposed Action Alternative, excavations within and outside of the original dam disturbance area would occur as well as restrictions to public access during construction. Disturbed areas would be revegetated, and recreation and hunting restrictions would be lifted post-construction. However, any subsurface cultural resources may be permanently impacted as the Project would result in an increased disturbance footprint and permanent impacts to native, untillied prairie soils would occur. Although most ground disturbance would occur within existing disturbance areas, construction activities associated with both undisturbed and pre-disturbed land have the potential to disturb cultural and archaeological resources.

Impacts to CSKT families and their traditional cultural use of the area were not quantified or mitigated for as part of or in response to the original dam construction. Thus, improvements to the dam and associated infrastructure would perpetuate their existence.

Monitoring of construction with the ability to cease actions for archaeological recovery if needed have been determined as the appropriate mitigative measures for the Proposed Action by the TPD. TPD would be notified in advance of the start of construction and a cultural site-monitor would be onsite during construction. If any historic or cultural resources are encountered during construction, all construction activities surrounding the impacted area would cease and TPD would be contacted immediately. All construction activities would cease until a notice to proceed is received by TPD. Continued communication and transparency with the Preservation Department, Culture Committees, and Elders Advisory Committee is essential and would be maintained throughout the duration of the Project. Due to the history that accompanies the project area and the difficulty both in quantifying existing cultural impacts and the impacts which would be perpetuated with the extended life of the dam post-construction, impacts from the Proposed Action would be substantial and long-term.

5.6 Socioeconomic Conditions

5.6.1 Employment and Income

5.6.1.1 Affected Environment

From 2019-2023, 51.3 percent of the population 16 years of age and over were employed, 44.9 percent were not currently in the labor force, and 19.2 percent of people were in poverty on the FIR. 10 percent of people employed were in natural resources, construction, and maintenance occupations, 11.2 percent were in production, transportation, and material moving occupations, and 38.0 percent were in management, business, sciences, and arts occupations. The median yearly income was \$58,794, and 7.9 percent of households had incomes below \$10,000 per year (U.S. Census Bureau 2019-2023).

5.6.1.2 No Action Environmental Impacts

Under the No Action Alternative, risks of dam failure would persist and likely worsen. Breach or failure of the dam has the potential to inundate downstream communities and damage community infrastructure and private property which would require expensive and extensive repairs. Disproportionate impacts to disabled or low-income populations residing downstream could occur if injury, property damage, or loss of life were to occur. Transportation north and south on US Highway 93, which is a primary commuting route to and from business centers, could also be substantially impacted in the event that dam failure would result in inundation and damage to the highway, as discussed in section 5.7.1.6.

5.6.1.3 Proposed Action Environmental Impacts

Throughout the duration of construction, traffic may be impacted on US Highway 93, residential access on Kicking Horse Dam Rd., making commuting more difficult. However, the Project would not influence long-term employment opportunities or local or geographical income levels. However, the Project is considered a heavy civil project and would occur over multiple years with year-round construction, providing opportunities for high paying construction employment during project implementation. The project would be bid for construction and advertised via multiple outlets such as newspapers, bid exchanges, and through the CSKT Indian Preference Office. The Project would pay Davis-Bacon wages and would provide consistent, year-round employment during construction. After construction, employment for the operation and maintenance of the dam would remain similar to its current structure. As such, impacts to Employment and Income as a result of the Proposed Action would be moderate, temporary and beneficial.

5.7 Resource Use Patterns

5.7.1 Recreation

5.7.1.1 Affected Environment

The Kicking Horse reservoir is a popular location for recreationists, particularly for fishing along the shore and via an informal boat launch on the southeastern corner. Historically, the major species targeted and harvested by anglers were Largemouth Bass, Pumpkinseed, and Yellow Perch, with Brook Trout, Rainbow Trout and Black Bullheads additionally making up minor components of the harvest. More recently, however, Northern Pike, Smallmouth Bass, and Crappie were illegally introduced into the reservoir and now also contribute to the fishery. Fisheries management goals are primarily directed at providing a quality Largemouth Bass fishery. To accomplish this, there is a 5-bass limit, a protective slot, and harvest limits on large fish. Tribal members are permitted to hunt for large and small game, and upland and waterfowl bird hunting is open to the public from September 1 to early January (CSKT and MFWP, 2024).

5.7.1.2 No Action Environmental Impacts

In the absence of the Proposed Action, access to the reservoir would not be restricted. However, additional restrictions may be implemented in the future if Facility conditions worsen and problems associated with introduced fish species would continue to persist, as described in section 5.4.1.2.

5.7.1.3 Proposed Action Environmental Impacts

The Proposed Action would cause a near complete loss of the existing fishery from reservoir drawdown, resulting in a substantial, long-term impact. Largemouth Bass are popular not only for those practicing catch-and-release angling, but also for individuals interested in harvesting fish. As indicated in section 5.4.1, recovery of the Largemouth Bass population to that of existing conditions may take several years. However, restocking of the reservoir may occur from local sources such as from Octabeck Pond. In contrast, the Proposed Action would present an opportunity to address the negative impacts of existing non-native species in the reservoir, the control of which would improve the health of the fisheries population long-term both locally (within the reservoir) and by reducing the chance of spread of invasive species of fish to surrounding waters.

The area would be restricted to hunters, anglers, and general recreationists for the duration of the project. Local wildlife may be temporarily displaced, as discussed in section 5.4.1.3. However, long-term impacts are not anticipated as wildlife is expected to use the site as normal post-construction and public access restrictions would be lifted. The exception to this would be the implementation of a restricted access period along the west end of the reservoir, as managed by the CSKT Wildlife Program, in order to protect sensitive species during the nesting season. To offset these impacts, CSKT may voluntarily pursue future actions to provide improved recreation access at alternative locations. However, mitigation is neither requested nor required by the CSKT Recreation program and future projects are not planned at this time. Transportation Networks

5.7.1.4 Affected Environment

The Facility is located east of Highway 93 south of Ronan, MT. Highway 93 is a busy, two lane highway with no shoulder and is the primary route north to south through the FIR. Kicking Horse Dam road provides access from the west entrance for residents, administrative personnel, and recreationists as well as to a shop owned by Montana Department of Transportation. Residents on the east side of the reservoir may access their homes via the Kicking Horse road from Eagle Pass Rd., however, the road is not maintained and is in a state of disrepair. Therefore, residents regularly utilize the road along the dam crest to access their properties.

Lake county maintains the 0.5 mile stretch of Kicking Horse Dam road from the Highway turnoff and the CSKT Roads Program maintains Canal Road from Mollman Pass Road up to where the Kicking Horse feeder canal meets the reservoir. FIIP is responsible for maintenance from this point to Eagle Pass Road.

5.7.1.5 No Action Environmental Impacts

Under this alternative, construction traffic on US Highway 93 and Kicking Horse Dam road would not occur. However, in the case of dam failure, downstream floods have the potential to impact US Highway 93, causing inundation and damage to the roadway and potentially dangerous or life-threatening conditions along this primary route for transportation north to south through the FIR.

5.7.1.6 Proposed Action Environmental Impacts

During Construction Canal road would be closed to the public. Access to Kicking Horse Dam road would be limited to construction and administrative personnel and those who reside on the west side of the reservoir. Traffic control on Highway 93 may be necessary during times of high traffic volume and safety signs and/or traffic signals would be posted at the turnoff at all times during construction. Excess material from the excavation of the dam crest would be utilized on Canal road from the east end of the reservoir to Eagle Pass

Rd. in order to improve road conditions within the existing road prism. The purpose of this would be to provide emergency ingress/egress during construction as well as to provide residents on the east side of the reservoir access to their properties from Eagle Pass Rd. The remainder of Canal road from the west side of the reservoir to the north end of the reservoir would be improved within the existing road prism as part of the dike raise activity, and gates would be placed at both north and south access points to the west end of the reservoir in order to preclude public access during the nesting season. Minor, short-term adverse effects would be associated with lack of access and traffic control on Highway 93 during construction, and moderate long-term beneficial impacts would be associated with the improved road conditions post project.

5.7.2 Land Use Plans and Management

5.7.2.1 Affected Environment

The Prairie Pothole Communities surrounding the Kicking Horse Reservoir was a Tribal allotment, then a former range unit which was rededicated as Kerr (SKQ) project mitigation habitat under the Habitat Acquisition and Restoration Plan (HARP) as directed by article 67 of the Federal Energy Regulatory Commission (FERC) license for the SKQ dam. The land was designated as a Wildlife Habitat Mitigation Site by the Tribal Council to be restored and managed specifically for the benefit of the wildlife resources. The CSKT biologists targeted this area for mitigation specifically for its unique history of never being plowed and its persistent native plant and wildlife communities.

5.7.2.2 No Action Environmental Impacts

No changes in land use would occur as part of this alternative.

5.7.2.3 Proposed Action Environmental Impacts

The Proposed Action Alternative would result in substantial permanent impacts to lands and wildlife habitat managed as mitigation for the SKQ dam through the CSKT Wildlife Program, though overall land use and existing protections would not change. These impacts are specifically associated with permanent upland and wetland impacts outside of the existing Facility footprint as a result of specific project elements including the borrow area. Of particular concern are the permanent impacts to native, untilled soils, which would never be able to be replicated on or off site. To offset these impacts, CSKT DEWR would bring off-site land acquisitions into the SKQ-managed wildlife habitat lands.

5.8 Other Values

5.8.1 Ecologically Sensitive/Critical Areas

5.8.1.1 Affected Environment

The Montana Native Plant Conservation Strategy (Strategy), recognizes prairie pothole communities as one of the Montana Plant Communities of GCN (MTNHP 2024). The Strategy has also recognized Oregon checker-mallow (*Sidalcea oregana*) as a Plant Species of GCN which occurs throughout the proposed and surrounding environment.

Native untilled prairie soil is ecologically sensitive due to its unique structure which is formed over long geological time scales which cannot be reformed in our lifetime. The mostly intact native plant communities

that make up this critical habitat partially exist due to these native soils that are only found within this area in the Mission Valley.

5.8.1.2 No Action Environmental Impacts

The No Action Alternative would not result in excavations to unique and ecologically sensitive areas of untilled soils, Plant Species of GCN, and prairie pothole communities and therefore would not result in short or long-term impacts to these resources. However, it is unknown what impacts would occur in the case of dam failure. Area flooding may have minimal impacts on these resources, however, significant erosion and build-up of washout material could have significant long-term impacts on vegetation and soils. Repair or rebuilding of the reservoir, or any other alternative to manage this scenario is unknown and could have additional long-term impacts on these resources as well.

5.8.1.3 Proposed Action Environmental Impacts

The Proposed Action Alternative would have substantial long-term impacts on ecologically sensitive resources as a result of extensive excavations within the Project footprint, particularly in the borrow area. Actions to offset impacts to ecologically sensitive/critical areas are encompassed in Sections 5.7.3.3 and 5.9. Within the Project footprint, several individual Oregon checker-mallow (*Sidalcea oregana*) plants would be disturbed or removed from the environment. Seeding efforts and/or transplanting at risk individuals would occur in order to offset these impacts at a local level. The CSKT Wildlife Program would supply the seeding material and monitor plant transplanting.

5.8.2 Noise and Light

5.8.2.1 Affected Environment

Ambient noise levels have not been measured in the project area and a baseline does not exist. However, the Facility is located approximately 0.5 miles from US Highway 93, which serves as the primary travel corridor through the FIR. Thus, consistent noise from highway traffic can be heard from the Facility. Vehicle traffic from recreators, residents, and administrative personnel are a daily occurrence. The closest noise receptor is a residential home approximately 66 yards from the project's western edge along with five other residential or commercial properties within 0.5 miles of the western proximity of the proposed Project, and 13 parcels within 0.5 miles of the eastern proximity of the proposed Project. General wildlife including resident waterfowl utilize the area as well.

The nearest sources of light to the Project Area include adjacent homesites and headlights from vehicle traffic outside of daylight hours.

5.8.2.2 No Action Environmental Impacts

Noise and light conditions would not change under this alternative.

5.8.2.3 Proposed Action Environmental Impacts

Noise and light would increase under the Proposed Action due to increased construction activity and impacts are expected to be short-term and moderate. Construction activities would include the extensive use of heavy equipment for nearly every project feature and the batch plant would increase noise levels while in operation for the cutoff wall. Work hours would predominantly occur during daylight hours, but may occur outside of

daylight hours on occasion, particularly when days are shorter during winter months. Construction may be permitted to occur overnight with CSKT approval in order to meet project deadlines, which would increase noise and light impacts during this time. However, night construction is not expected to occur as a consistent element of the Project. Thus, impacts from work occurring outside of daylight hours would be temporary and minor.

5.8.3 Visual Resources

5.8.3.1 Affected Environment

The Project Area is located on the valley floor with visual obstructions limited to scattered nearby development, far reaching variations in topography, and the Mission Mountains. Though manmade, the reservoir is a naturalized area which hosts a plethora of terrestrial and aquatic species, is a popular use area for recreation, and is surrounded by prairie pothole habitat interspersed with a combination of invasive and native plant species. Aside from adjacent development, noticeably manmade structures include the Canal road, Kicking Horse Dam Rd., canal infrastructure, and the Kicking Horse Dam.

5.8.3.2 No Action Environmental Impacts

Impacts to visual resources would be unlikely to change under the No Action Alternative. However, additional reservoir restrictions, if placed, could impact the aesthetics of the reservoir under consistently lower water levels. Changes in vegetation and use by wildlife could occur in this scenario, decreasing the visual value of the area.

5.8.3.3 Proposed Action Environmental Impacts

During construction, substantial excavations of the existing dam and appurtenant infrastructure would occur. For the duration of the project, the Facility would experience substantial short-term impacts to visual aesthetics which would persist until the site is successfully revegetated one to two years post-construction. The Project would be visible from nearby residences and US Highway 93. Additionally, the reservoir would be drawn down and dewatered for nearly one year, and infrastructure testing could lengthen this timeframe. This would impact the visual attributes of the reservoir compared to normal operations and would temporarily disturb wildlife habitat and use (see section 5.4). Dike raises and other elements of the Project would not impact the topography to the level of obstructing existing views in the general area.

Minor visual impacts would be associated with the two access roads and increased footprint of the dam, which would be permanently constructed and would result in permanent fill of some wetlands. Additionally, the borrow area would result in a permanent depression in the earth. This area would be restored as upland habitat with new gradients, or would be transformed into a constructed wetland that would mimic surrounding pingo features.

5.8.4 Public Health and Safety

5.8.4.1 Affected Environment

US Highway 93 is a two-lane highway with no shoulder that serves as the primary transportation route through the FIR. The Kicking Horse Reservoir is a high use area for recreationists, and private residences are located at both the east and west ends of the Project Area. The area surrounding the reservoir is made up of

predominantly natural features with private residences and businesses occurring within one mile downstream of the reservoir.

5.8.4.2 No Action Environmental Impacts

The No Action Alternative could result in substantial and far reaching short-term and long-term impacts in the case of dam failure including infrastructure damage, environmental damage, and loss of life. In a 2013 Comprehensive Dam Review and a 2022 Emergency Action Plan, data showed that dam or dike failure could endanger a Population-At-Risk (PAR) of up to 684, would inundate Highway 93 with a maximum depth of 15 feet, and would cause cascading damage to downstream water infrastructure, as discussed in section 5.2.1.2 (Bureau of Reclamation 2013).

Under the No Action Alternative, heavy year-round, multi-year construction would not occur. Increased traffic, therefore, would not occur and would not require traffic control at the intersection of Kicking Horse Dam road and US Highway 93. Public access would not be restricted as no significant repair or construction activities would be planned at the Facility.

5.8.4.3 Proposed Action Environmental Impacts

Construction traffic would cause increased traffic safety issues at the intersection of Kicking Horse Dam road and US Highway 93 as well as for residents accessing their properties on the west end of the Project Area. There are no alternative access routes for private landowners on the west end. Residential access on the east end of the project area would be made possible by improvements to the Kicking Horse Dam road, providing an improved access route for residents and emergency traffic via Eagle Pass road. The use of signage, lights, and reduced speed limits would be in place. The existence of only two lanes through the project vicinity and the high use of Highway 93, traffic speed would be significantly reduced and the effects would extend far north and south of the project area during high traffic periods. Due to this, impacts would be a short-term, moderate level. Alternative routes as described in section 5.7.1.6 would likely not be able to support the high traffic volumes and large trucks that frequent the highway corridor. The proposed project would reduce or eliminate the threats to public health and safety discussed under the No Action Alternative.

5.8.5 Indian Trust Assets

5.8.5.1 Affected Environment

All of the land within the Project area is owned by the Tribes and is managed by the CSKT Wildlife Program as wildlife mitigation for impacts from the SKQ dam, as described in section 5.7.2.1.

5.8.5.2 No Action Environmental Impacts

No impacts would occur to Indian trust assets as part of the No Action Alternative.

5.8.5.3 Proposed Action Environmental Impacts

Land status would not change as a result of the Proposed Action. However, permanent impacts to wetlands, as described in section 5.2.3.3 and uplands as described in section 5.8.1.3 would occur. As stated previously, all lands within the Kicking Horse Reservoir area were established as wildlife mitigation lands for impacts associated with the SKQ dam. Due to the Proposed Action, there would be long term, substantial impacts to these mitigation lands associated with earthwork and construction that would not be able to be replaced in

kind. Furthermore, onsite opportunities are limited, therefore offsite restoration of upland and wetland habitats would be pursued in coordination with the CSKT Wildlife Program.

5.9 Cumulative Impacts

Projects expected to occur in the Action Area and surrounding areas include a reservation-wide broadband project that will bring fiber-optic cable to residences throughout the FIR, roadwork by the Montana Department of Transportation (MDT) along the US Highway 93 corridor, and the reconstruction of the Crow Pumping Plant downstream of the Project on South Crow Creek.

CSKT Broadband Infrastructure Project

The broadband project is expected to be complete by the end of August, 2026. Work would include the construction of a tower on the north end of the Reservoir and work on the powerlines along the US Highway 93 corridor which would require the parking of vehicles and equipment along the side of the road near the reservoir entrance. Coordination between CSKT and their contractors would be prioritized in an effort to minimize complications with the Proposed Action such as crews and equipment accessing the entry point to the Project simultaneously.

MDT US Highway 93

Multiple phases of projects are under design and planning by MDT along Highway 93 in the vicinity of the project. Proposed work includes the widening and repaving of the roadway, inclusion of turn lanes and shared use paths, the replacement/installation of bridges, and the installation of a wildlife underpass. Projects would stretch from Red Horn road to the south and Brook lane to the north. Road construction would occur at various stages between Fall 2026 and 2031. Coordination between SOD, MDT and their contractors would be prioritized in an effort to minimize complications with the Proposed Action.

Crow Pumping Plant

The Crow Pumping Plant project is currently under construction at the time of this Environmental Assessment and is expected to be completed by the end of 2026. Work includes the improvement of the canal system downstream of the diversion, inclusion of fish passage at the site, and facility construction required for the pumping plant to be operational again, which has not been the case for several years. Once operational, water pumped from Crow Creek will allow more flexibility in irrigation deliveries and will help to offset impacts to irrigators associated with the Kicking Horse Dam Modification Project.

Crow Wetland Mitigation Reserve

As part of the Crow Pumping Plant project, wetland and stream restoration work would occur in order to improve and increase habitat adjacent to the stream as compensatory mitigation. These actions would generate credits under CWA Section 404 and ALCO which could be used to offset impacts from other projects carried out under the Compact, including the proposed Project.

Boat Launch and Day-Use Facility

Coordination between SOD, DEWR, CSKT Fisheries, and the CSKT Recreation Program occurred during the design phase of the proposed Project for the purposes of offsetting impacts to recreation opportunities during multiple years of construction as well as impacts to fisheries. As a result, the interdisciplinary team identified

an opportunity to construct an offsite boat launch. Construction of a new boat launch would provide recreationists an alternative access for boating and fishing opportunities, and would allow the CSKT Fisheries Program to perform monitoring duties. The project is currently under design at the time of this Environmental Assessment and would undergo an independent impacts analysis and permitting process.

Targeted Land Acquisition

The Proposed Action would permanently impact wildlife habitat managed as SKQ mitigation through the CSKT Wildlife Program. To offset the impacts from the lost lands and habitat at the Project, CSKT DEWR would bring offsite land acquisitions into the SKQ-managed wildlife habitat lands.

6.0 Mitigation

No significant impacts have been identified for the proposed action, and thus no mitigation is required. Construction BMPs intended to avoid or minimize impacts to resources are presented in Section 4.3.6 and in the relevant resource sections above.

7.0 Coordination and Consultation

- Coordination with CSKT resource specialists informed the reduction in impacts wherever practicable throughout the design process.
- The CSKT TPD and Ksanka and Séliš-Qlispé Culture Committees 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 August 6th, 2025 (Attachment C).
- Informal consultation with USFWS under Section 7 of the Endangered Species Act was requested by CSKT biologists with the preparation of a Biological Assessment on October 23rd, 2024. On November 4th, 2024 the USFWS responded with a Letter of Concurrence.
- Coordination with CSKT Water Quality occurred on August 16th, 2022 and January 5th, 2023 to determine jurisdiction and recommendations for management of water quality during construction. Various meetings were held with USACE including a joint meeting with the CSKT Water Quality and the CSKT Shoreline Protection Programs to inform the permitting process for the Project. An Approved Jurisdictional Determination was issued on August 22nd, 2025 outlining wetlands and waters that would be considered jurisdictional by USACE, thus requiring mitigation if permanently impacted. An Individual Permit and Water Quality Certification were requested at the time of the writing of this EA and would be obtained prior to construction pursuant to the Clean Water Act Sections 401 and 404 (respectively).
- An ALCO 87A permit application was submitted to the Shoreline Protection Office at the time of the writing of this EA, and a permit would be obtained prior to construction. Through multiple correspondences with the Shoreline Protection Office, all naturally-occurring wetlands (not manmade or seepage-induced, and matching pre-dam topography) is expected to be within the Tribal jurisdiction. Mitigation requirements would be identified as part of the permit issuance.

8.0 List of Contributors

Taryn Bushey	CSKT NEPA Coordinator
Greg Wilson	CSKT Compact Engineering Officer
Trevor Bras	CSKT Project Engineer
Tabitha Espinoza	CSKT Restoration Program Manager
Seth Makepeace	CSKT Compact Project Officer
Brian Hogenson	CSKT Water Management and Planning Manager
Casey Ryan	CSKT Division Manager - DEWR
Loga Fixico	CSKT GIS Lead Analyst
Randall Ashley	CSKT Air Quality Program Manager
Art Soukkala	CSKT Wildlife Biologist

Gunner Davies	CSKT Wildlife Habitat Restoration and Management Specialist
Amber Swicegood	CSKT Wildlife Biologist
Craig Barfoot	CSKT Fisheries Biologist
Scott Johnston	CSKT Roads Program Manager
Madeline Caye	CSKT Tribal Historic Preservation Officer
Kayla Ashley	CSKT Contract Anthropologist
Levia Shoutis	Geum Environmental Consulting Environmental Compliance Specialist
Jesse Wallace	Geum Environmental Consulting Senior GIS Specialist

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Attachment A:

Design Plan Set

Attachment B:

Endangered Species Act Section 7

Biological Assessment

and

Letter of Concurrence

And

Reinitiation of Section & for Newly Proposed Species

Attachment C:

National Historic Preservation Act Section 106 Cultural Clearance Letter

Attachment D:

Wetland Delineation Report

and

United States Army Corps of Engineers

Approved Jurisdictional Determination Letter