RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Minidoka Powerplant Unit 7 Structure Maintenance and Rehabilitation

Minidoka County, Idaho

U.S. Department of the Interior
Bureau of Reclamation
Pacific Northwest Region
Snake River Area Office
Boise, Idaho

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U.S. DEPARTMENT OF THE INTERIOR

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian tribes and our commitments to island communities.

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The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Cover Photograph: View looking upstream from below the original powerhouse and Unit 7 structures at Minidoka Dam. The original powerhouse structure spans the outlet channel; the shorter Unit 7 structure is visible at the far left.

Acronyms and Abbreviations

Acronym or Abbreviation	Description
APE	Area of Potential Effect
BMP	Best Management Practice
BP	Before the Present
CFR	Code of Federal Regulations
CWA	Clean Water Act
cfs	cubic feet per second
dB	decibel
dBA	A-weighted decibels
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impacts
ft/s	feet per second
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Labor
IPaC	Information for Planning and Conservation
ITAs	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA Fisheries	National Marine Fisheries Service
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OSHA	Occupational Safety and Health Administration

Acronym or Abbreviation	Description
Reclamation	Bureau of Reclamation
RMP	Resource Management Plan
ROD	Record of Decision
SHPO	State Historic Preservation Office
T&E	Threatened and Endangered
TP	Total Phosphorus
TMDL	Total Maximum Daily Load
Census Bureau	United States Census Bureau
USFWS	United States Fish and Wildlife Service

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Chapter 1. **Purpose and Need**

1.1. Introduction

An Environmental Assessment (EA) has been prepared by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) in compliance with the National Environmental Policy Act (NEPA). This EA summarizes a Reclamation proposal to perform construction activities necessary for the maintenance and rehabilitation of the Minidoka Powerplant Unit 7 draft tube bulkhead structure, including removal, replacement, and reinforcement of bulkhead gates and sluice gates. The Unit 7 structure is located at Minidoka Dam, Minidoka County, Idaho.

This EA also serves as a tool to aid the authorized officer in making an informed decision that is in conformance with applicable Federal laws and regulations. The Proposed Action and Alternatives are described in Chapter 2 of this document, and the effects (direct, indirect, and cumulative environmental effects) of each alternative are evaluated for each of the affected resource areas in Chapter 3 of this document.

1.2. Background and Existing Facilities

The Minidoka Project, one of the earliest Federal Reclamation projects in Idaho, comprises multiple facilities including Minidoka Dam, the reservoir it impounds (Lake Walcott), and Minidoka Powerplant. The Minidoka Project serves lands north and south of the Snake River. Minidoka Dam and Lake Walcott are located in south-central Idaho on the Snake River Plain, north of the junction of Interstate 84/86, east of the town of Rupert, Idaho (Figure 1). Minidoka Dam supplies irrigation water, provides irrigation water storage, and generates power via Minidoka Powerplant that is delivered to the Bonneville Power Administration for marketing (Hess et al. 2002).

The original Minidoka Powerplant (Units 1 through 5), completed in 1910, had a total generation capacity of 7.5 megawatts. In order to meet increased power production needs of the Minidoka Project, as well as to keep pace with the growing market for power in nearby towns, Minidoka Powerplant's Unit 6 was installed in 1927, and Unit 7 was installed in 1942. Due to age, Units 1 through 5 were decommissioned in 1993–1994, but Units 6 and 7, as well as newer Units 8 and 9 (known as the Inman Powerplant, added in 1997), remain in service with a combined generating capacity of 28.5 megawatts (Hess et al. 2002).

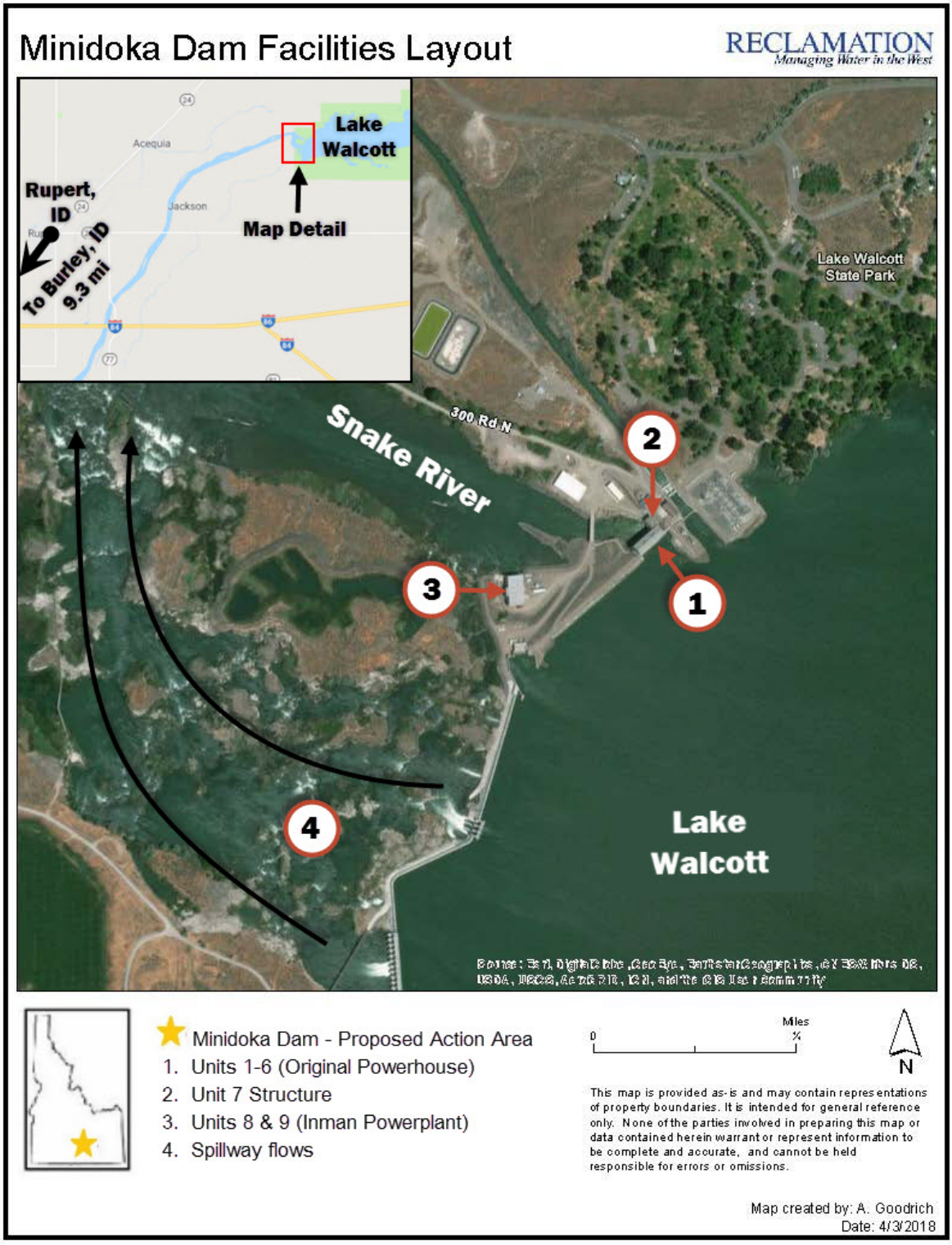


Figure 1. Map showing the general location of the proposed project area at Minidoka Dam, in Minidoka County, Idaho. Numbered labels identify the layout of Minidoka Dam and Powerplant facilities discussed in this document.

1.3. Purpose and Need for Action

The purpose of the proposed action is to improve the structural integrity of Minidoka Powerplant Unit 7, such that dewatering for regular maintenance is feasible, and to avoid further deterioration leading to potential structural failure.

The current state of the Unit 7 structure, which has undergone degradation over its 75 years in service, creates the need for this action. Portions of the Unit 7 downstream draft tube bulkhead gate concrete and steel, original to the structure, have deteriorated over time and require repairs (Figure 2). The bulkhead gate steel slots and adjacent concrete, which support the guides for the bulkhead gates and operators, has deteriorated to a point where the bulkhead gate may not be adequately stabilized in the structure (Photograph 1 and Photograph 2). Additionally, leaks caused by this degradation severely hamper Reclamation's ability to dewater and perform adequate routine maintenance on the lower portion of Unit 7. The deteriorated concrete and steel need to be repaired and/or replaced before further degradation compromises the integrity of the powerplant structure. Failure of the sluice gates could result in the uncontrolled dewatering of Lake Walcott.

Figure 2. General view of a growing gap between the original powerhouse and the Unit 7 structure caused by ongoing deterioration of structural concrete. Sections of missing concrete and exposed rebar are highlighted by blue circle and arrow, respectively.

Photograph 1. This photograph, taken from the downstream side of the Unit 7 bulkhead gate structure, shows an example of the deterioration of supporting concrete present on the original pier nose.

Photograph 2. View of the deterioration downstream side of the Unit 7 roller gates. Concrete spalling and lamellar corrosion (corrosion that proceeds laterally from sites of initiation along planes parallel to the surface, generally at grain boundaries) are visible on concrete and steel.

1.4. Legal Authority

The Minidoka Project was authorized by the Secretary of the Interior under the Reclamation Act of 1902 on April 23, 1904. Specific to power production, the authority to accept funding from the Bonneville Power Administration for power provided is granted under Section 2406 of P.L. 102-486, the Energy Policy Act of 1992, which was signed on October 24, 1992.

1.5. Regulatory Compliance

The following section contains a summary of the major laws, executive orders, and secretarial orders that apply to the proposed action.

1.5.1. National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires an agency to fully disclose potential effects of its proposed action on the environment and possible mitigation measures. This evaluation is documented and presented to the public in the form of an EA for this project. If, following public scoping and alternative evaluation, no significant effects to the human environment are identified, then a Finding of No Significant Impact (FONSI) will be prepared and signed. However, if significant effects that cannot be mitigated or eliminated are identified through the EA process, Reclamation will prepare a notice of intent (NOI) to prepare an environmental impact statement (EIS) for the project. A record of decision (ROD) would be issued following completion of a Final EIS.

1.5.2. Clean Water Act (33 U.S.C. 1251 et seq.)

Section 402 of the Clean Water Act (CWA) authorizes the National Pollution Discharge Elimination Systems (NPDES) permit program. NPDES requirements are designed to mitigate potential direct, indirect, and/or cumulative effects on the environment. Details on potential effects to water quality are described in Section 3.4 of this document.

1.5.3. Endangered Species Act (1973)

Section 7 of the Endangered Species Act (ESA) requires Federal agencies to use their legal authorities to promote the conservation purposes of the ESA. Agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries), as appropriate, to ensure that effects of actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species, or destroy or adversely modify their critical habitat. In accordance with Section 7 of the ESA, an agency must request information from the USFWS and the NOAA Fisheries about whether any threatened and endangered species occur within or near the action area. The agency then must evaluate effects to those species. If it is determined that the action may adversely affect any ESA-listed species or their habitat, the agency must consult with USFWS and/or NOAA.

1.5.4. Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act of 1918 (MBTA), codified at U.S.C. §§ 703-712, is a Federal law that implements the convention for the protection of migratory birds between the United States and Great Britain (acting on behalf of Canada). Later amendments implemented treaties between the United States and Mexico, the United States and Japan, and the United States and the former Soviet Union (now Russia). This statute specifically prohibits the pursuit, hunt, take, capture, kill, or sale, without a waiver, of any of more than 800 bird species listed therein as migratory. The statute grants full protection to any bird parts, including eggs, feathers, and nests. The USFWS is the authority which may issue permits for activities otherwise prohibited under this legislation.

1.5.5. National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires that Federal agencies consider the effects that their projects have on properties eligible for or listed on the National Register of Historic Places (National Register). The 36 Code of Federal Regulations (CFR) 800 regulations provide procedures that Federal agencies must follow to comply with the NHPA. For any undertaking, Federal agencies must determine if there are properties of National Register-quality in the project area, the effects of the project on those properties, and the appropriate mitigation for adverse effects. In making these determinations, Federal agencies are required to consult with the State Historic Preservation Office (SHPO), Native American Tribes with a traditional or culturally significant religious interest in the project area, the interested public, and in certain cases, the Advisory Council on Historic Preservation.

1.5.6. Executive Order 13007: Indian Sacred Sites

Executive Order (EO) 13007, dated May 24, 1996, instructs Federal agencies to promote accommodation of access to and protect the physical integrity of American Indian sacred sites. A sacred site is a specific, discrete, and narrowly delineated location on Federal land. An Indian Tribe or an Indian individual determined to be an appropriately authoritative representative of an Indian religion must identify a site as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion. However, this is provided that the Tribe or authoritative representative has informed the agency of the existence of such a site.

1.5.7. Secretarial Order 3175: Department Responsibilities for Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States (with the Secretary of the Interior acting as trustee) for Indian Tribes or Indian individuals. Examples of ITAs are lands, minerals, hunting and fishing rights, and water rights. In many cases, ITAs are on-reservation; however, they may also be found off-reservation.

The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to Indian Tribes or Indian individuals by treaties, statutes, and EOs. These rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that officials from Federal agencies, including Reclamation, take all actions reasonably necessary to protect ITAs when administering programs under their control.

1.5.8. Executive Order 12898: Environmental Justice

EO 12898, dated February 11, 1994, instructs Federal agencies, to the greatest extent practicable and permitted by law, make achieving environmental justice part of its mission by addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Environmental justice means the fair treatment of people of all races, incomes, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative environmental effects resulting from the execution of Federal agency programs, policies, and activities.

Chapter 2. **Alternatives**

2.1. Introduction

This chapter describes the alternatives analyzed in this EA: Alternative A – No Action Alternative and Alternative B – Proposed Action.

2.2. Alternative Development

The alternatives presented in this chapter were developed based on the purpose and need for the project, as described in Chapter 1, and the issues raised during internal, external and tribal scoping. The alternatives analyzed in this document include the proposed maintenance and rehabilitation construction activities to remove, replace, and reinforce the bulkhead gates and components and sluice gates in the Minidoka Unit 7 bulkhead structure, and the no-action alternative. A no-action alternative is evaluated because it provides an appropriate basis by which the other alternative is compared. No new alternatives were identified during the scoping process.

2.3. Description of Alternatives

2.3.1. Alternative A – No Action

The proposed maintenance and rehabilitation construction activities would not occur. Current operations and maintenance at Minidoka Dam would continue as they have in the past. This includes standard operations of the dam to raise the reservoir elevation in the spring/summer to a level that provides adequate flow to the main canals of the Burley and Minidoka Irrigation Districts throughout the irrigation season, and to pass inflow during the winter. Releases are adjusted according to yearly and seasonal variation, but in general, most discharge beyond spillway flows required for the maintenance of protected biota and trout fisheries is routed through the powerplant. Regularly scheduled maintenance is performed after the irrigation season, when the reservoir level is lowered slightly; the reservoir is typically kept full or near-full.

Under the No Action alternative, the Unit 7 structure would remain in service but experience ongoing deterioration. Reclamation considers this action to be unacceptable for long-term operations. Pursuing the No Action alternative at this time would mean the necessity for a future action would remain, as postponing this maintenance and rehabilitation work cannot be considered a permanent solution. The No Action alternative is included in the EA to compare effects of the Proposed Action Alternative to the current conditions (No Action), and as required under NEPA. Potential future failure of the structure is not analyzed or considered part of the No Action Alternative.

2.3.2. Alternative B – Proposed Action

Reclamation proposes to remove and replace components of three bulkhead gates in the Minidoka Unit 7 draft tube bulkhead structure and the addition of concrete reinforcement

plugs downstream of four existing sluice gates. This would include the removal, offsite disposal, and replacement of three existing roller-style outlet gates, gate channels, actuators, seals, sill plates, operators, and other structural steel (e.g., railings) in the Unit 7 draft tube bulkhead structure.

Installation of replacement materials would require hydrodemolition and offsite disposal of cracked, weak, or otherwise deteriorating concrete from the existing pier structures surrounding the gate channels, and placement of new concrete and rebar to rebuild the piers. Hydrodemolition (also known as hydroblasting, hydromilling, waterblasting, and waterjetting) is a concrete removal technique that uses high-pressure water to remove concrete, asphalt and grout material; the water used in this process would be imported and fully recaptured by the contract awardee for appropriate offsite disposal according to industry standards. Four reinforced concrete sluice plugs (each plug measuring 9 feet wide, 12 feet high, and 16 feet deep) would be placed immediately downstream of the existing sluice gates, using the sluice gates as the upstream form, and rebar would be tied into the existing concrete structure to ensure structural integrity is maintained under loads of up to 50 feet of hydraulic head from the upstream reservoir. Pressure-grouting (a process of inducing grout under pressure into cracks or spaces to ensure full penetration of the grout material) of the top 6 inches of these plugs would be performed at placement. Access to the outlet gates and sluice gates would be achieved via a crane, to be staged on an existing pad downstream of the Unit 7 powerhouse. Removal of materials that may contain hazardous substances (e.g., lead-based paint, powder coatings, etc., on railings) and the finish coating of installed replacement components would be performed with appropriate containment measures in place to minimize mobilization and prevent any contamination. Specific coatings and coating procedures to be used would be proposed by the contract awardee and subject to approval by Reclamation.

This work would require the shutdown of Units 6 and 7, and the dewatering of an area of up to 2,800 square feet (approximately 40 feet by 70 feet) in the tailrace immediately downstream from the Unit 7 draft tube bulkhead structure through construction of a cofferdam system. Dewatering would occur to a depth of approximately 1 foot below the level of the existing sluice gate floor. Specifications of the cofferdam system would be proposed by the contract awardee and subject to approval by Reclamation. Full-depth dewatering below the original Minidoka powerhouse would not be permitted. The cofferdam placement and work completion during dewatering is expected to take 2 to 3 months. Cofferdam placement and the overall duration of dewatering would not exceed 4 months. All work would take place between October 1, 2019, and March 31, 2020.

Releases from Units 8 and 9 would be used to meet minimum required winter flows and keep the channel wetted while Unit 7 is shut down for maintenance. Although Units 8 and 9 are downstream from where the cofferdam would be placed, water discharged from these units would backup upstream to the cofferdam, keeping the channel wetted up to the cofferdam. If

discharging additional flows becomes necessary for flood control, releases over the spillway would be increased.

2.4. Alternatives Eliminated from Consideration

Additional alternatives beyond the Proposed and No Action Alternatives included in this document were not considered. No additional alternatives were raised during Tribal and public scoping.

2.5. Actions Considered for Cumulative Effects

Cumulative effects are defined in 40 CFR 1508.7 as the effect on the environment that results from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions. The Council on Environmental Quality interprets this regulation as referring only to the cumulative effect of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Past, present, and reasonably foreseeable actions identified in the area (public or private) that could adversely affect the same resource areas evaluated in this EA would be additive effects to the proposed project. These actions are considered for cumulative effects and are identified below.

Snake River Access Boat Ramp Replacement

Reclamation plans to excavate and replace the existing boat ramp located about ¼-mile downstream from Minidoka Dam, along the north bank of the Snake River, to meet current safety standards. These access facilities would be brought up to modern accessibility standards by reconfiguration and construction of the boat parking area and completion of accessible parking and routes to the restrooms.

The new boat ramp design reduces the slope of the ramp by extending it farther into the parking lot, and includes the addition of new parking spots to offset the loss of spaces in the existing parking area. The footprint of the boat ramp in the river bed will remain unchanged, with all excavation work taking place above the ordinary high-water mark and according to Best Management Practices (BMPs) for the industry. Following completion of the excavation work for this project, the site will be cleaned of any debris and the area contoured by hand to match the existing shoreline. This project is expected to entail approximately 2 months of work, to begin in late September 2018. It is estimated it will result in disturbance to approximately 0.75 terrestrial acres, much of which is already within the footprint of the existing access facilities and parking.

Specifics of and effects expected to result from this project are discussed in more detail in the EA/FONSI document that was prepared for this action (Reclamation 2017).

Minidoka Powerplant Units 8 and 9 Maintenance

Units 8 and 9 of the Minidoka Powerplant are currently offline (meaning no water is being routed through them for power production) for rehabilitation maintenance. Their location in relation to the Unit 7 structure is shown in Figure 1. These maintenance operations are to be completed, and flows restored through these units, before any shutdown of Unit 7 or dewatering of the project area downstream from Unit 7 for the Proposed Action would occur.

Chapter 3. **Affected Environment and Environmental Consequences**

This chapter evaluates the environmental consequences of implementing each of the alternatives described in Chapter 2. The level and depth of the environmental analysis corresponds to the context and intensity of the impacts anticipated for each environmental component. The affected environment (proposed action area) addressed in this EA includes the Minidoka Unit 7 draft tube structure and an area of up to 2,800 square feet (approximately 40 feet by 70 feet) in the tailrace immediately downstream from the Unit 7 draft tube bulkhead structure, with staging/access to take place on the existing crane pad immediately downstream from the Unit 7 structure.

Resources evaluated in this document were selected based on Reclamation requirements, compliance with laws, statutes, executive orders, public and internal scoping, and on their potential to be affected by the proposed action.

The following resources are analyzed in this EA for direct, indirect and cumulative effects:

- Biological Resources
- Threatened and Endangered Species
- Hydrology
- Water Quality
- Noise
- Cultural Resources
- Indian Sacred Sites
- Indian Trust Assets
- Recreation
- Socioeconomics
- Environmental Justice

3.1. Summary Comparison of the Environmental Effects of the Alternatives

The environmental effects of Alternative A – No Action and Alternative B – Proposed Action are summarized in Table 1. Potential short- and long-term, direct and indirect effects of the alternatives are summarized. The environmental consequences of the alternatives arranged by resource are described in detail in Chapter 3.

Table 1. Summary of environmental effects identified for each resource category analyzed in this document.

Resource	Alternative A: No Action	Alternative B: Proposed Action
Biological Resources	No effects.	Short-term, temporary displacement of fish (dewatered area), and possible displacement of waterfowl/mammals in localized area of construction activity, limited to construction period. No long-term effects.
Threatened and Endangered (T&E) Species	No effects.	No effects.
Hydrology	No effects.	Short-term, temporary changes to water velocity, limited to localized project area (dewatered channel) and up to 200m downstream (backwatered area), and limited to construction period. No effect to overall Snake River flow amounts. No long-term effects.
Water Quality	No effects.	Short-term, temporary detectable increase in sediment and turbidity in Snake River immediately downstream from project area (≤1km), especially immediately following cofferdam removal. No long-term effects.
Noise	No effects	Short-term, temporary increase in noise disturbance, limited to localized area of construction activity and areas immediately adjacent to project site (≤200 feet), and limited to working hours during construction period. No long-term effects.
Cultural Resources	No effects.	No effects.

Resource	Alternative A: No Action	Alternative B: Proposed Action
Indian Sacred Sites	No effects.	No effects.
Indian Trust Assets	No effects.	No effects.
Recreation	No effects.	Short-term, temporary disturbance possible to recreational visitation, limited to construction period and limited to areas immediately adjacent to localized area of construction activity. Project area is not an area of public access.
Socioeconomics	No effects.	Short-term, minor economic gains possible in local area due to revenue from construction/contracting services. No long-term effects.
Environmental Justice	No effects.	No effects.

3.2. Biological Resources

3.2.1. Affected Environment

Vegetation

The area of potential effect is limited to a short stretch of the river channel, downstream from the Unit 7 structure to the Inman powerplant (Units 8 and 9). It does not include terrestrial vegetation and is almost entirely non-vegetated riprap.

Aquatic

Downstream and adjacent to the project area are the spillway and Bishop's Hole (approximately ¼-mile downstream), which have become important fishery resources. Flows from the reservoir provide for vigorous growth of algae and aquatic invertebrates. The abundant food source of aquatic insects enhances the area's fish populations and sustains a valuable fishery (USFWS 1989). The trout fishery in the river below the dam is maintained primarily by hatchery fish planted each year in the reservoir. These trout become entrained below the dam by passing through the southside radial gates into the spillway, which leads them into the river below the dam. Many of the trout in the spillway area grow to be trophy-size, ranging from 2 to 6 pounds (IDFG 2007a).

Idaho Department of Fish and Game (IDFG) conducted a fish survey below Minidoka Dam in September 2007 (IDFG 2007b). Habitats sampled included riffle, pool, run, and isolated pool. Fish species detected below the dam and spillway area included common carp, dace species, rainbow trout, redside shiner, sculpin species, smallmouth bass, Utah chub, sucker species, and yellow perch. The dominant species detected was smallmouth bass, collected at 91 percent of the sampled locations. Redside shiner, rainbow trout, and yellow perch were sampled at 50 percent, 41 percent, and 41 percent of sampled sites, respectively.

Wildlife Resources

The project area is on lands withdrawn by Reclamation for power generation and water storage. The Minidoka Wildlife Refuge extends upstream approximately 25 miles from Minidoka Dam along both shores of the Snake River, encompassing a total of 20,699 acres, of which 11,300 acres are the open water of Lake Walcott, the Snake River, and some small marsh areas. Minidoka Refuge has been designated under the Important Bird Area Program as an area of global significance because of its colonial nesting bird populations and for the numbers of molting waterfowl. The Important Bird Area Program identifies areas that have high value for birds throughout the world. In the United States, this program is coordinated by the National Audubon Society.

Birds

The Minidoka Refuge bird lists (USFWS 1989, USFWS 2002) indicate that the waterfowl species most likely to use proposed project area and nearby wetlands and grain fields include mallards (*Anas platyrhynchos*), gadwalls (*A. strepera*), and cinnamon teals (*A. cyanoptera*). Fewer numbers of redheads (*Aythya americana*), ruddy ducks (*Oxyurajamaicensis*), pintails (*Anasacuta*), American wigeons (*Anas americana*), and northern shovelers (*Anas clypeata*) breed in the refuge area and may occasionally use drain water wetlands. Wintering waterfowl include Canada geese (*Branta canadensis*), mallards, pintails, gadwalls, American wigeons, northern shovelers, and green-winged teals (*Anas crecca*). Tundra swans (*Cygnus columbianus*) forage in grain fields near the project area in low numbers during migration. Great blue herons (*Ardea herodias*), American avocets (*Recurvirosta americana*), long-billed curlews (*Numenius americanus*), killdeer (*Charadrius vociferous*), and other shorebirds would also be expected to use the larger wetlands, as would red-winged blackbirds (*Agelaius phoeniceous*). In addition, white pelicans (*Pelicanus erythrohynchus*), grebes (*Podicipedidae*), Sabine's gull (*Xema sabini*), and several other species of gulls use the area just below the dam during the summer.

Mammals

The location of the area of effect is almost entirely within the river channel, which is already highly altered by the presence of Minidoka Dam. The staging area for the project would be the only location where there would be any possible effects, due to its location near the facility maintenance quarters. Therefore, there would be no expected effects to any mammal

species or their habitats. Additionally, there will be no changes to flows during the project that would affect areas downstream to warrant a wider habitat assessment.

Raccoons (*Procyo lotor*), muskrats (*Ondatra zibethica*), long-tailed weasels (*Mustelafrenata*), and mink (*Mustela vison*) may sporadically move through the area of effect but would likely use adjacent areas during construction.

Amphibians and Reptiles

The location of the area of effect is almost entirely within the river channel, which is already highly altered by the presence of Minidoka Dam. The staging area for the project would be the only location where there would be any possible effects, due to its location near the facility maintenance quarters. Therefore, there would be no expected effects to any amphibian and reptile species or their habitats. Additionally, there will be no changes to flows during the project that would affect areas downstream to warrant a wider habitat assessment.

3.2.2. Environmental Consequences

Alternative A – No Action

Current conditions would continue under Alternative A. There would be no effects to any biological resources. There would also be no additional long-term adverse effects to biological resources resulting from Alternative A.

Alternative B – Proposed Action

The Proposed Action would cause short-term effects to some biological resources, which would be limited due to the short duration of construction and small, localized area of effect. There may be temporary displacement of some fish species during the construction period, but they will vacate the dewatered area as the construction starts. No long-term adverse effects on any other aquatic resources are anticipated.

Effects to waterfowl and some mammals would be similar. There may be some temporary displacement of some waterfowl and mammal species during the construction period, but they will move to adjacent areas within the spillway. Nesting season will be over by the time the construction starts, and duck broods will move downstream if they are disturbed by the noise and construction. Overall, most waterfowl species using the area are not very sensitive to noise. The area of effect is an active water storage facility, and there are constant, loud noises. All the species using this location are accustomed to the noise and can easily move downstream if disturbed.

3.2.3. Cumulative Effects

Reclamation plans to excavate and replace the existing boat ramp located about ¼-mile downstream from Minidoka Dam, along the north bank of the Snake River, to meet current safety standards. However, this project is scheduled to occur in the fall of 2018 and will be

completed before the proposed alternative would begin in the fall of 2019. Therefore, there will be no cumulative effects.

3.3. Threatened and Endangered Species

3.3.1. Affected Environment

The direct effects of the proposed alternative are limited to a small area. Channel dewatering would affect less than 2,800 square feet of river channel. Outside the area that would be dewatered, reconfiguration of discharges would change water velocities (but not result in dewatering) in an additional reach of the river channel approximately 650 feet long, from downstream from Units 6 and 7 to where flows from Units 8 and 9 meet the main channel (an area identified in Figure 3). The site will be accessed using access from existing roads. The area of effect is located within Minidoka County.

The USFWS Information for Planning and Consultation (IPaC) identified that two Federally listed species occur in or could potentially occur near the area of effect: the Snake River physa (*Physa natricina*), designated as endangered in 1992, and yellow-billed buckoo (*Coccyzus americanus*), designated as threatened in 2014. Critical habitat has not been designated for either species. The full IPaC report is included in Appendix A.

Snake River physa

Two habitat parameters known to correlate with Snake River physa presence are water velocity and the type of substrate. Gates and Kerans' (2010) detailed study sampled cross-sections of the river profile and characterized Snake River physa habitat as occurring in runs, glides, or pools, with a moderate mean water velocity of 1.87 feet/second (ft/s). Snake River physa have been collected on substrates from pebble through bedrock and are thought to avoid fine sediment (Gates and Kerans 2010; Taylor 1982; Winslow et al. 2011). There have been 237 Snake River physa sampled in the Snake River between Minidoka Dam and river mile 669 since 2012, and all were found in areas with water velocities lower than 2.72 ft/s (Reclamation 2018).

Although there is an active population of Snake River physa downstream of the project area near the old Jackson Bridge site, and live physa have also been periodically detected in the area below the spillway, it is not known whether Snake River physa are present in the proposed project's area of effect. The area of effect includes the area to be dewatered, as well as the section of the channel between the Unit 7 structure and Units 8 and 9. This area would remain wetted, largely by backwatering, during construction. However, water velocity patterns would be altered, as no discharges would be passing through Units 6 or 7 during the proposed construction work. This change in flow configuration would result in reduced water velocity, which in turn could result in a temporary increase in sediment deposition in this area.

Substrate in the project area is mostly bedrock or concrete. Normal water conditions in the area to be dewatered include high velocities and turbulence from the combined outflow from

Units 6 and 7, with a maximum discharge of 2,270 cubic feet per second (cfs) and water velocities estimated to exceed 2.72 ft/s during normal operations (Brooks pers. comm. 2018; Photograph 3). This high velocity would likely prevent snails from being able to use this habitat. Previous samples collected in the area upstream from Units 8 and 9 did not detect physa; one individual was found downstream from where water discharged through Units 8 and 9 merges with water from Units 6 and 7, an estimated 650 feet downstream from Units 6 and 7 (Figure 3). Industry-standard sediment control measures will be used to limit downstream transport of fine sediment.

Photograph 3. Turbulent water near the outlet of Unit 7

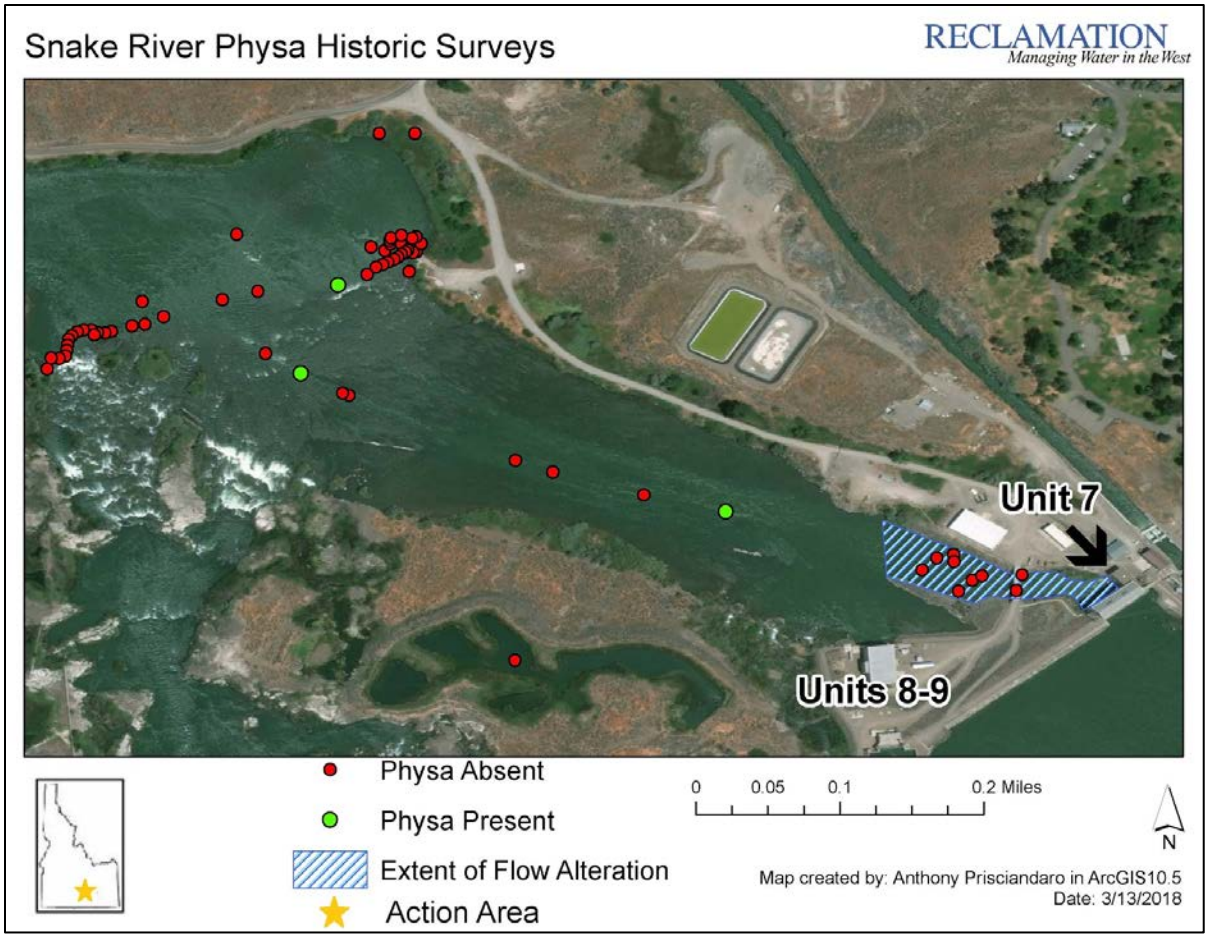


Figure 3. Map of past Snake River physa surveys. Surveys were conducted during July or August between 2006 and 2017. Dots represent suction dredge surveys for Snake River physa; red dots indicate that physa are absent, and each green dot represents one individual found. The area indicated as Extent of Flow Alteration represents the area that will be backwatered but has little to no water velocity during construction.

Yellow-billed Cuckoo

The western yellow-billed cuckoo is known to nest and rear young almost exclusively in low- to moderate-elevation stands of dense riparian vegetation within arid to semiarid landscapes, making this species an obligate riparian nester. Preferred nesting habitat stands occur in broad floodplains along rivers and in areas where rivers and streams enter impoundments, and most often consist of mature cottonwood, willow-cottonwood, or mesquite forest. Suitable nesting habitat features a dense understory, dense canopy closure, high foliage volume, and sufficient humidity. Nesting pairs require a 50-acre minimum patch size of prime riparian habitat; smaller patches are rarely occupied (Hughes 1999).

The closest proposed critical habitat for this species is found at the upstream end of American Falls Reservoir, 46 miles straight-line distance from Minidoka Dam; however, critical habitat has not yet been designated for this species. The habitat in the immediate area of the proposed alternative is not suitable for nesting, although transient individuals likely

move through the area on the way to proposed critical habitat areas upstream, and may use the area for foraging and stopover during migration to and from nesting areas.

3.3.2. Environmental Consequences

Alternative A – No Action

Current aquatic and riparian habitat conditions, as described in the description of the affected environment, would remain unchanged under the no-action alternative. No changes to the operations would occur, and there would be no effects to threatened and endangered species.

Alternative B – Proposed Action

Snake River physa

Snake River physa are not likely to occur in the action area, especially the high-velocity area that will be dewatered upstream of the coffer dam. Informal consultation with USFWS led to the conclusion that the proposed action may affect, but is not likely to adversely affect, Snake River physa.

Changes to flows could affect Snake River physa. However, minimum flows of at least 425 cfs, as described in the 2015 Biological Opinion addressing the effects of Reclamation operations on Snake River physa (USFWS 2015) would still be provided, meaning that any physa present downstream from Units 8 and 9 would not be affected by any reduction in flows. In the highly unlikely event that flow increases for flood control releases are needed during construction, water that would have passed through Unit 7 may be diverted over the Minidoka Spillway. Snake River physa have been documented in the spillway at higher flows during the summer, so it is expected that higher flows during the winter would not negatively affect any snails present.

Yellow-billed Cuckoo

Due to its migratory life history, this bird is only present in Idaho during its nesting season, which occurs from June through September. Construction would occur between October and March, outside the timeframe when any birds would be expected to be present. Therefore, the proposed alternative is expected to have no effect to the western yellow-billed cuckoo.

3.3.3. Cumulative Effects

The current maintenance work being done on Units 8 and 9 of the Inman Powerplant will be completed prior to work starting on Unit 7. Outside of the area to be dewatered above the coffer dam at Unit 7 (up to 2,800 square feet), the remainder of the channel will always be watered with flows from the Inman Powerplant. Any delays in completion of the maintenance work for Units 8 or 9 would delay the start of this maintenance on Unit 7.

3.3.4. Mitigation

A survey of the dewatered area would be conducted to confirm that no physa are in the area. If found, any physa would be moved downstream of the coffer dam. An application for a State of Idaho scientific collection permit will be submitted for this work in the appropriate

year. USFWS staff would be on-site for the surveys, and work would be conducted under their Federal collection permit.

Any sediment that is released by the proposed actions will be limited by the implementation of construction BMPs (discussed in more detail in Section 3.5 of this document), and would not be expected to be significant enough to affect any Snake River physa that may be present downstream from the construction site.

3.4. Hydrology

3.4.1. Affected Environment

Discharge from Minidoka Dam flows into the Snake River via several routes (or a combination of the following): through the original powerplant (Unit 6), the Inman powerplant, or the spillway, located on the south bank (all are identified in Figure 1). The hydropower facilities discharge into the original river channel; flows from all points of discharge meet approximately ½-mile below the dam. Snake River flows (measured at the Snake River near the Minidoka U.S. Geological Survey gauge, approximately 1 mile downstream of the project location) vary widely depending on the time of year, irrigation demand, and water supply. In general, flows of at least 525 cfs is maintained during winter months, which includes discharges from the powerplant facilities, as well as the spillway. Flows increase during spring runoff to reserve flood control space as needed (typically late March through June), and flows are subsequently maintained for irrigation demand (typically June through October). The proposed construction is planned to coincide with the seasonal low-flow period (October through March), so river levels at the downstream end of the Unit 7 structure are more manageable for construction.

Figure 4 shows daily flow data for the Snake River near Minidoka for the 30-year period of 1981 to 2010, and demonstrates the general seasonal flow patterns described above. Lines for the minimum and maximum flows recorded during this period of record, as well as the 25th, 50th, and 75th percentile flows, are shown. In general, flows between the 25th and 75th percentiles are considered normal, flows less than the 25th percentile are below normal, and flows greater than the 75th percentile are above normal.

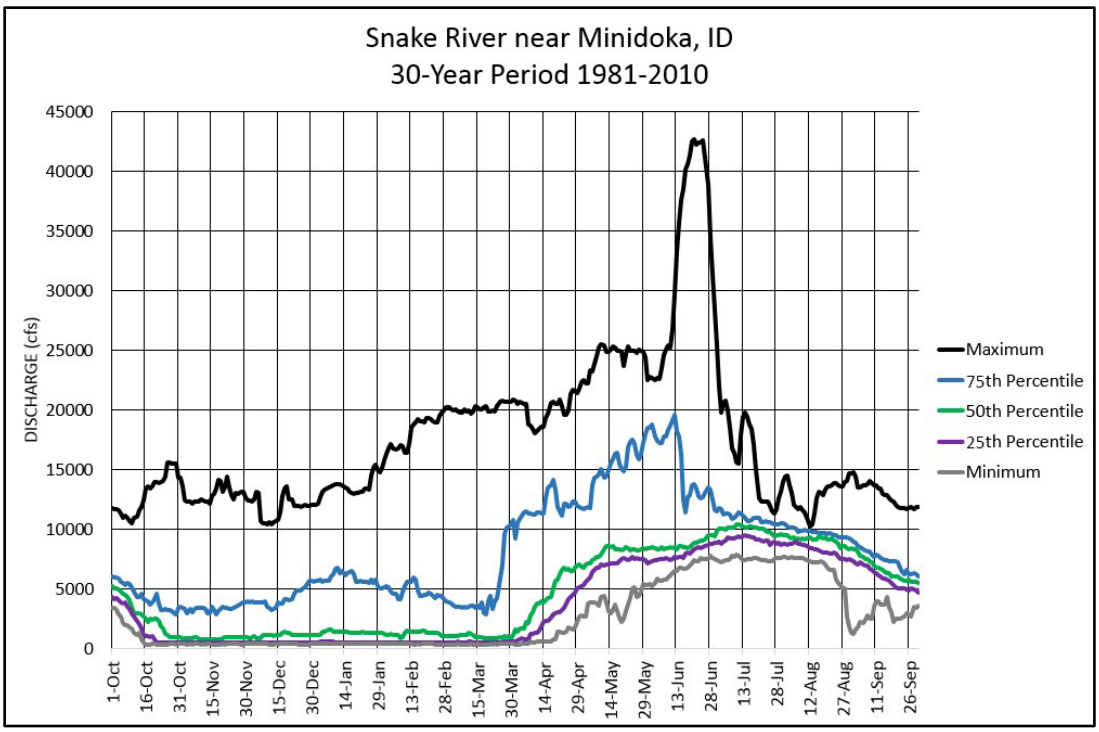


Figure 4. Daily historic flow data for the Snake River near Minidoka for the 30-year period of 1981 to 2010, available on Reclamation's Hydromet site[1]

3.4.2. Environmental Consequences

Alternative A – No Action

Under the No Action Alternative, the existing Unit 7 draft tube structure would continue to deteriorate in the short- and long-terms, which will allow the material being dislodged from the Unit 7 structure to be transported and deposited in the downstream river reach. This deposition of material would be minor and wouldn't affect channel hydraulics or water quality in the downstream river ecosystem. Basin hydrology at Minidoka Dam would be unaffected under the No Action Alternative.

Alternative B – Proposed Action

Under the Proposed Action, portions of the Unit 7 downstream draft tube structure would be removed and then replaced with new materials. This work would include a cofferdam at the downstream end of the draft tube structure. Hydrodemolition would occur, and all waste materials would be captured and disposed of properly. In the short- and long-terms, the updated structural features would stop the loss of structural material into the downstream river ecosystem. The placement of a coffer dam during the proposed work would affect river hydraulics only in the approximately 650-foot reach of the river upstream from the Inman Powerplant, which will become backwatered while flows are stopped from generating Units 6 and 7 during construction. However, the same overall amount of discharge would be

[1] Reclamation's Hydromet site can be accessed at https://www.usbr.gov/gp/hydromet/.

redirected through Units 8 or 9, which are located in a separate channel leading into the Snake River to the west of Unit 7 (Figure 1). Basin hydrology and overall discharges from Minidoka Dam would be unaffected under the Proposed Action.

The Proposed Action would return the Unit 7 structure to its original structural integrity and would not alter basin hydrology or discharges. The location and magnitude of discharge from Minidoka Dam would remain consistent with past operations of releasing water through the powerplants and spillway gates to accommodate flood releases from upstream reaches of the Snake River, delivering irrigation water to downstream users, and generally maintaining winter discharge of 525 cfs or more.

3.4.3. Cumulative Effects

Although Units 8 and 9 are currently shut down due to separate maintenance actions, they are expected to be online so that discharges can be reconfigured to pass through Units 8 and 9 before any shutdown of Units 6 and 7 or dewatering of the project area immediately downstream of Unit 7 occurs. The return of Units 8 and 9 to service would be necessary before work the proposed work can begin on Unit 7; therefore, overall discharge would be unchanged. The pending boat ramp replacement project, planned to take place downstream from the action area in the fall of 2018, involves work almost entirely above the waterline and should be completed well before the proposed action would occur in late 2019. Therefore, no cumulative effects to either local or basin-wide hydrology below the proposed action area are anticipated.

3.5. Water Quality

3.5.1. Affected Environment

Water quality for Lake Walcott and the Snake River is managed by the State of Idaho under the framework of the CWA. The Idaho Department of Environmental Quality (IDEQ) has established water quality standards for specific physical and chemical parameters in order to provide suitable conditions to support beneficial uses, including irrigation water supply, public water supply, recreation, and aquatic life (IDEQ 2008). The designated beneficial uses of Lake Walcott include cold-water aquatic life, primary/secondary contact recreation, and domestic water supply. The beneficial uses designated for the segment of the Snake River below Lake Walcott Reservoir where the project area would be located are cold-water aquatic life, salmonid spawning, and primary/secondary contact recreation.

Section 303(d) of the CWA requires states and tribes to identify water bodies that do not meet water quality standards. The most recent approved 303(d) list is the 2014 Integrated Report (IDEQ 2017). For lakes, rivers, and streams identified on this list, states and tribes must develop water quality improvement plans known as total maximum daily loads (TMDLs). These TMDLs establish the amount of a pollutant a water body can carry and still meet water quality standards.

Applicable Water Quality Standards

The water quality criteria (narrative and numeric) that protect the designated and existing beneficial uses for Lake Walcott and the Snake River downstream of the Minidoka Dam spillway are discussed below.

Numeric water quality standards have been developed by IDEQ (2008) for temperature, dissolved oxygen, and turbidity (the cloudiness or haziness of water due to suspended particles), among other water quality properties:

- **Water temperature standard**
    - Cold water aquatic life:
        - Maximum daily *maximum* temperature no greater than 22°C (71.6°F)
        - Maximum daily *average* temperature no greater than 19°C (66.2°F)
    - Salmonid spawning:
        - Maximum daily *maximum* temperature no greater than 13°C (55.4°F)
        - Maximum daily *average* temperature no greater than 9°C (48.2°F)
- **The dissolved oxygen standard** for cold-water aquatic life indicates that dissolved oxygen concentrations should be greater than or equal to 6 mg/L at all times.
- **The turbidity standard** for cold-water aquatic life indicates that turbidity below any applicable mixing zone shall not exceed background turbidity by more than 50 nephelometric turbidity units (NTU) instantaneously or more than 25 NTU for more than 10 consecutive days.

The standards for nutrients and sediment are narrative standards, which state that the level of a pollutant cannot exceed quantities that impair beneficial uses. Because these pollutants do not have numeric standards, surrogate numeric targets are often proposed in TMDLs or water quality assessments.

- **The standard for excess nutrients** states that "surface waters shall be free from excess nutrients that can cause visible slime growth or other nuisance aquatic growths impairing designated beneficial uses" (IDEQ 2008).
- **The standard for excess sediment** states that "sediment shall not exceed quantities which impair designated beneficial uses." Determinations of impairment are based on water quality monitoring and surveillance, and the information used as described in Section 350 (IDEQ 2008).

Lake Walcott Reservoir

Flows into the reservoir are controlled by American Falls Dam, which is operated to meet downstream demands for irrigation and other water rights. Sediment carried into Lake Walcott by the Snake River and other tributary streams generally deposits in the upstream

portions of the reservoir, where the waters transition from river-like to lake-like. This transitional area begins approximately 4 river miles downstream from the confluence with Raft River. Sediment deposited in this area may be redistributed to lower areas of Lake Walcott each year when the reservoir is drawn down in the winter for spillway protection. In addition, Lake Walcott also retains much of the nutrient load passing through from American Falls Reservoir, as well as the nutrient loads from tributary streams and other point and non-point sources located upstream from the reservoir.

As part of an ongoing reservoir monitoring program for operating projects, Reclamation collects water quality data every 3 years from Lake Walcott. These samples are analyzed for chemical, physical, biological, and trace metal parameters. Data can be retrieved and reviewed at the EPA water quality database STORET[2].

As indicated in Table 2, water quality measurements generally fall within the beneficial use standards. However, water quality conditions in Lake Walcott currently do not support the designated and existing beneficial uses. Lake Walcott is not meeting cold-water aquatic life and secondary contact recreation beneficial uses due to mercury (IDEQ 2018). This was determined from a 2005 smallmouth bass sample that contained a mercury concentration of 0.332 milligrams per kilogram (mg/kg), which exceeded the human health criterion of 0.3 mg/kg.

[2] The EPA water quality database STORET can be accessed at https://ofmpub.epa.gov/storpubl/dw_pages.querycriteria.

Table 2. Descriptive statistics for total phosphorus, turbidity, dissolved oxygen, and water temperature from Lake Walcott water samples taken in 1995-2016

	Total Phosphorus (mg/L)[1]	Turbidity (NTUs)[2]	Dissolved Oxygen (mg/L)[1,3]	Water Temperature (°C)[3,4]
IDEQ Standard	Narrative standard, no numeric range	>50NTUs over background or >25NTUs for 10 days	>6 mg/L at all times	Cold-water aquatic life: ≤22°C, daily average ≤19°C; salmonid spawning: ≤13°C, daily average ≤9°C [5]
Minimum	0.01	1	1.1	13.6
Average	0.07	4.74	6.91	20.3
Median	0.06	4	7.0	20.7
Maximum	0.16	17	11.6	24.0
Sample Count	105	86	292	292

[1] mg/L = milligrams per liter
[2] NTU = nephelometric turbidity units
[3] instantaneous measurement conducted in the field
[4] C = Celsius
[5] Salmonid spawning temperature standards are not applicable to lake-type habitat; spawning only occurs in flowing water.

Snake River Downstream of Minidoka Dam Spillway

The water passing through Minidoka Dam is typically of excellent quality, due to the sediment and nutrient retention in Lake Walcott. Water quality tends to degrade downstream due to several large point sources, as well as many smaller agricultural drains and tributaries that carry non-point source loads of nutrients. As a result, the Snake River from Minidoka Dam on Lake Walcott to the Heyburn/Burley Bridge does not meet the cold-water aquatic life beneficial use due to total phosphorus (IDEQ 2018). Waste load and load allocations for total phosphorus were developed by the State of Idaho and are prescribed in the Lake Walcott Subbasin Assessment and TMDL. Total phosphorus (TP) targets for the Snake River downstream from Minidoka Dam are set at an average annual concentration of 0.08 mg/L of TP and a 0.128 mg/L TP daily maximum concentration to allow for natural variability. TP concentrations passing Minidoka Dam typically average 0.07 mg/L (Table 3). However, this data is collected at Jackson Bridge approximately 5 miles downstream from Minidoka Dam.

Table 3. Water quality descriptive statistics for total phosphorus, turbidity, dissolved oxygen, and temperature from the Snake River at the Jackson Bridge site below Lake Walcott taken 1995-2014

	Total Phosphorus (mg/L)[1]	Turbidity (NTUs)[2]	Dissolved Oxygen (mg/L)[1,3]	Water Temperature (C)[3,4]
IDEQ Standard	Narrative standard, no numeric range	>50NTUs over background or >25NTUs for 10 days	>6 mg/L at all times	Cold water aquatic life: ≤22°C daily maximum, ≤19°C daily average; salmonid spawning: ≤13°C daily maximum, ≤9°C daily average
Minimum	0.04	2	5.8	19.5
Average	0.07	4.5	7.79	21.7
Median	0.07	3.5	7.95	21.8
Maximum	0.12	11	9.1	24.4
Sample Count	20	20	20	20

[1] mg/L = milligrams per liter
[2] NTU = nephelometric turbidity units
[3] instantaneous measurement conducted in the field
[4] C = Celsius

During 2012-2017 *Physa natricina* monitoring, instantaneous water temperature, dissolved oxygen, and turbidity measurements were taken with a handheld water quality meter below the spillway, at a site adjacent to the proposed project site (Table 4). These water quality constituents are generally within Idaho State standards and are a better representation of what the water quality would be at the project site due to its proximity to the proposed project site (approximately 2,500 feet southeast of the proposed project).

Table 4. Descriptive statistics for water temperature, dissolved oxygen, and turbidity from Snail Pool taken in 2012-2017 from a handheld water quality meter in the month of August

	Water Temperature (C)[1]	Dissolved Oxygen (mg/L)[2]	Turbidity (NTUs)[3]
Minimum	19.9	7.2	4.4
Average	21.1	7.9	17.1
Median	20.7	7.9	15.3
Maximum	23.3	9.0	46.0
Sample Count	216	156	135

[1] C = Celsius
[2] mg/L = milligrams per liter
[3] NTU = nephelometric turbidity units

3.5.2. Environmental Consequences

Alternative A – No Action

Direct and indirect effects to water quality would remain the same as those from routine operations at Minidoka and other historically contributing factors, as discussed above. Water quality would continue to be affected by agriculture. Sediment and nutrient retention in Lake Walcott would continue to occur, and water immediately released from Minidoka Dam would continue to be of excellent quality and continue to meet IDEQ water quality standards.

Alternative B – Proposed Action

Direct and indirect effects to water quality would be minimal and likely be similar to the effects with Alternative A due to mitigation and BMPs implemented by the contractor. However, complete elimination of sediment and turbidity increases due to construction activities is unavoidable. These effects from increased sediment would be of short-term duration and would not contribute to any long-term effects. Potential contaminant sources from the proposed project include water from the hydrodemolition, debris from the hydrodemolition, and results from using a cofferdam.

Hydrodemolition would use imported water to remove concrete, asphalt, and grout material. The debris from the hydrodemolition would be removed to an appropriate off-site disposal area to reduce potential water contamination. Additionally, the water used in the process would be recaptured and disposed of at an industry-appropriate off-site location, effectively reducing the potential for water contamination.

Construction of the cofferdam is not a contaminant source itself. However, the resulting small debris and sediment from construction that could accumulate in the dewatered area created by the cofferdam could be a contaminant source. When the cofferdam is removed, water re-entering the dewatered area would flush any contaminants from the channel bed and

could create a sediment plume before the potential contaminants are dispersed downstream. To mitigate for this possibility, the contractor would be required to clean the dewatered area, similar to the cleanup mitigation performed above the Snail Pool area after the spillway construction in 2015 (Reclamation 2010). However, small amounts of sediment could still be delivered downstream and into the Snake River. Turbidity and sediment likely would increase temporarily, but due to contractor cleanup of the dewatered area prior to cofferdam removal, and the overall volume of water released from the dam which would be carrying these small amounts of sediment, it is unlikely State water quality standards for turbidity and sediment would be exceeded. Additionally, the Snake River (specifically spillway releases from Lake Walcott) would provide ample dilution to further reduce the sediment effects.

The proposed project would require a Section 404 permit from the U.S. Army Corps of Engineers. In addition, the State would then provide a CWA Section 401 water quality certification for the construction activity. These permits and certifications would outline requirements to minimize the effects to water quality associated with the construction activities.

The heavy equipment used in construction could present potential contaminant sources when working in the dewatered area. To mitigate these possible effects, the contractor would create and follow a spill prevention plan that would detail specific BMPs to prevent and minimize these risks. Additional BMPs would also be implemented by the contractor to minimize stormwater runoff and other erosional hazards that could affect water quality in construction staging areas.

3.5.3. Cumulative Effects

If the proposed project were to occur at the same time as the Minidoka boat ramp replacement project discussed in Section 2.5 of this document, the minor increase in sediment as an effect of the coffer dam removal would compound any sediment increases downstream due to the boat ramp replacement activities. The amount of sediment likely would be minor due to the various BMPs on both project to prevent sedimentation. Sediment mobilization would occur in short duration (i.e., less than 30 minutes after coffer dam removal), and water carrying increased sediment would be diluted quickly by the Snake River (specifically spillway releases from Lake Walcott), effectively nullifying any sediment effects. These effects are not expected to exceed State of Idaho water quality standards. If the Minidoka boat ramp is replaced in 2018, no cumulative effects to water quality are expected, because the effects from the boat ramp replacement would have been mitigated before effects from the proposed project could be realized in 2019.

Maintenance for Minidoka Powerplant Units 8 and 9 would have no cumulative effects to water quality, because no environmental effects are expected to occur during this project.

3.6. Noise

This section defines noise, describes the existing noise setting in the proposed action area, and identifies potential sensitive receptors. It then evaluates the effects of the construction noise on sensitive human noise receptors, and identifies mitigation measures to minimize these effects.

3.6.1. Affected Environment

For this assessment, noise is defined as unwanted sound that is objectionable because it is disturbing or annoying due to its pitch or loudness. Pitch is the height or depth of a tone or sound. Higher-pitched signals sound louder to humans than sounds with a lower pitch. Loudness is the intensity of sound waves combined with the reception characteristics of the ear.

A decibel (dB) is a unit of measurement that is used to indicate the relative amplitude of a sound. Sound levels in decibels are calculated on a logarithmic scale. Subjectively, each 10-dB increase in sound level is generally perceived as approximately a doubling of loudness. Technical terms are defined in Table 5.

Table 5. Noise-related terminology and definitions

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-weighted sound level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1, 10, 50, and 90 percent of the time during the measurement period.
Equivalent noise level, L_{eq}	The average A-weighted noise level during the measurement period.
Community noise equivalent level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Day/night noise level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.

Term	Definition
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient noise level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: (Illingworth and Rodkin 2006)

There are several methods of characterizing sound. The most common is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 6. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

Table 6. Representative outdoor and indoor noise levels (in units of dBA)

Noise source and distance from noise source	A-Weighted Sound Level in Decibels	Comparable noise level (common settings)	Listener's subjective impression and effect to hearing
	— 140 —		
Civil Defense Siren (100')	— 130 —		
Jet Takeoff (200')	— 120 —		Pain Threshold
	— 110 —	Rock Music Concert	
Diesel Pile Driver (100')	— 100 —		Very Loud Hearing Damage After 15 Minutes Exposure
	— 95 —		Repeated Exposure Risks Permanent Hearing Loss
Heavy truck (50')	— 90 —	Boiler Room	Very Annoying Hearing damage (8 hrs)

Noise source and distance from noise source	A-Weighted Sound Level in Decibels	Comparable noise level (common settings)	Listener's subjective impression and effect to hearing
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	— 80 —		Annoying, Intrusive Interferes with Conversation
Freeway (100')		In Kitchen with Garbage Disposal Running	
Vacuum Cleaner (10')	— 70 —		Moderately Loud Intrusive, Interferes with Telephone Conversation Noise Begins to Harm Hearing
		Data Processing Center	
Air conditioning unit (20')	— 60 —		Intrusive
		Department Store	
Light Traffic (100')	— 50 —		
Large Transformer (200')		Private Business Office	
	— 40 —		Quiet
		Quiet Bedroom	
Soft Whisper (5')	— 30 —		Very Quiet
		Recording Studio	
	— 20 —		
	— 10 —		Threshold of Hearing
	— 0 —		

Source: Illingworth and Rodkin 2006; USDOL 2006

Effects of Noise

Hearing Loss

Acoustic trauma is injury to the hearing mechanisms in the inner ear due to very loud noise. Hearing loss can occur due to chronic exposure to excessive noise, or may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration's (OSHA) noise exposure standard is set at the noise threshold at which hearing loss may occur from long-term exposures. OSHA's maximum allowable level is 90 dBA, averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter. Under OSHA noise exposure standards, workplace hearing conservation measures are required at 85 dBA for an 8-hour day, and feasible engineering or administrative noise controls are required when exposures exceed 90 dBA.

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors, the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA affect sleep.

Annoyance

Attitude surveys have determined that common noise-related causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. An L_{dn} of 60 dBA is perceived as highly annoying by approximately 10 percent of the population. Each decibel increase to 70 dBA adds about 2 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 3 percent increase in the percentage of the population highly annoyed.

Existing Noise Levels

Sensitive receptors for noise are defined as people at various locations who are participating in activities for which low noise levels are important (e.g., activities conducted at residences, hospitals, schools, libraries, recreational areas, and places of worship). Sensitive noise receptors near Minidoka Dam include the park (located upstream of the construction zone, adjacent to the reservoir approximately 400 feet from the North Side Canal headworks), wildlife refuge, and nearby residences. The closest private residences are downstream of the construction zone about 2,600 feet, located on the north side of the river.

Minidoka Dam is located in a primarily rural, agricultural area. Background noise levels in wilderness and rural areas typically range between 35 and 45 dBA. Background noise levels are approximately 40 dBA in rural residential areas and 45 dBA in agricultural cropland with equipment operating.

The primary sources of noise in the park, rural residential, and agricultural areas near Minidoka Dam include roadway traffic and boating and farm machinery on a seasonal basis.

Ambient noise levels in the reservoir area outside the immediate areas of the park and dam are low. Noise sources in these areas are predominantly natural, including insects, birds, wind, flowing water, and weather.

3.6.2. Environmental Consequences

The potential noise effect associated with Minidoka Dam, with or without the Proposed Action, is the temporary disturbance resulting from noise generated by equipment and machinery used during construction.

Construction hours will likely range from 8 to 12 hours per day; Reclamation does not anticipate any 24-hour workdays. Therefore, only daytime effects are described.

There are no Federal noise regulations pertaining to the Proposed Action. Noise level estimates for specific construction equipment at various distances are shown in Table 7.

Table 7. Standard construction equipment noise levels (dBA) of equipment to be used in Proposed Action, as measured at varying distances from the noise source

Equipment		Distance from Source of Noise			
Type	**Specific equipment**	**25 Feet**	**50 Feet**	**100 Feet**	**200 Feet**
Earth/Material Moving Equipment	Front-loaders	85	79	73	67
	Backhoes	91	85	79	73
	Trucks	97	91	85	79
Materials Handling Equipment	Concrete pumps	82	76	70	64
	Cranes (movable)	89	83	77	71
	Concrete mixers	91	85	79	73
Stationary Equipment	Pumps	82	76	70	64
	Generators	82	76	70	64
	Compressors	87	81	75	69
Impact Equipment	Pneumatic wrenches	91	85	79	73
	Jackhammers and rock drills	94	88	82	76
Other	Vibrator	82	76	70	64
	Saws	84	78	72	66

Abrasive blasting/hydroblasting noise levels come from a combination of sources, including air compressors and discharge from the blast nozzle. Noise levels for compressors is given in Table 7. Abrasive blasting/hydroblasting noise levels measured at the discharge nozzle range from 112 to 119 dBA (OSHA 2006).

American National Standards Institute Section A10.46-2007, Hearing Loss Prevention in Construction and Demolition Workers, applies to all construction and demolition workers with potential noise exposures (continuous, intermittent, and impulse) of 85 dBA and above.

Noise effects would be considered significant if the project would:

- Cause a **substantial permanent increase** in ambient noise levels in the project vicinity above levels existing without the project; and/or
- Cause a **substantial temporary increase** in ambient noise levels in the project vicinity above levels existing without the project.

Alternative A – No Action

Under the No Action alternative, the Unit 7 structure would remain in service in its current configuration and would continue to deteriorate. As the concrete continues to deteriorate, maintenance requirements will increase.

Construction Effects

The ongoing maintenance period would likely take a few weeks to months and would depend on activities needed. Noise levels associated with maintenance activities will vary based on the numbers and types of equipment used. As shown in Table 7, typical noise levels of individual pieces of construction equipment range from of 80 to 107 dBA at a distance of 25 feet, and 62 to 89 dBA at a distance of 200 feet. Noise levels from all construction zone activities would have attenuated to acceptable levels at the park and private residences. Noise effects associated with construction of this alternative would be temporary and minimal.

Alternative B – Proposed Action

Construction Effects

Under Alternative B, construction would take approximately 6 months and require the use of equipment such as trucks, cranes, generators, and pumps. Work is expected to occur 8 to 12 hours a day and be conducted Monday through Friday. The engines and motors associated with the equipment would temporarily elevate noise levels in the construction zones, the park, and the reservoir, and potentially extend to the residences near the site. As shown in Table 7, typical noise levels of individual pieces of construction equipment range from of 80 to 90 dBA at a distance of 25 feet, lowering to 62 to 79 dBA at a distance of 200 feet. Because of the distances between the park/residences and the project area, noise levels from all construction zone activities would have attenuated to acceptable levels at the park and private residences.

It is anticipated that hydroblasting would be required to remove cracked or weakened concrete from the existing structures. Noise levels at the discharge nozzle range from 112 to 119 dBA (OSHA 2006). These noise levels would dissipate at a rate similar to other sources, and be expected to be below the annoyance level of 70 dBA before they reach the park or local residences.

Personnel working in the facility are already regularly exposed to elevated noise levels and follow industry-standard protocols for hearing protection while at their job sites. Those entering the construction zone would be required to use hearing protection appropriately rated for the expected noise levels of the area.

Noise effects associated with construction of this alternative experienced by personnel working at the dam facilities and by members of the public at the park and private residences would be temporary and minimal.

Operational Effects

Noise levels would remain unchanged from current conditions; therefore, there would be no effects.

3.6.3. Cumulative Effects

No cumulative effects are anticipated, as the boat ramp replacement and Unit 8 maintenance projects are scheduled to be complete before the Unit 7 project starts. If the projects overlap, it is anticipated that noise levels would not cumulatively increase. The boat ramp project is approximately ¼-mile from Minidoka Unit 7. The distance between the two projects would allow for the noise from each project to dissipate before it could combine to create a cumulative effect.

The Unit 8 maintenance would project would not have any cumulative effects when combined with the Unit 7 project because the Unit 8 project is being conducted indoors and the noise would be dissipated by the powerhouse structure.

3.6.4. Mitigation

Section 8 of Reclamation's Safety and Health Standards provides general requirements for hearing protection, which would be followed during completion of the proposed work. Section 8.4.2 Hearing Protective Devices states, "Use hearing protective devices (properly inserted ear plugs or ear muffs) whenever ambient noise levels equal or exceed 85 dBA. Hearing protection provided would be capable of reducing employee noise exposure below an 8-hour TWA of 85 dBA."

3.7. Cultural Resources

This section discusses the potential effect to cultural resources listed in or eligible for listing in the National Register of Historic Places (National Register) within the area of potential effects (APE). The entire project occurs within the boundaries of the Minidoka Dam and Powerplant, which is listed in the National Register. A finding of effect was completed in

January 2017, when Reclamation analyzed the effects of the project on the characteristics that make the site significant. Additionally, letters were sent to the Shoshone-Bannock Tribes to determine if additional cultural resources important to the tribes were located within the APE. Reclamation initiated consultation with the Idaho State Historic Preservation Office (SHPO) in February 2017, and they concurred with the finding of no adverse effect to historic properties on March 2, 2017. No response was received from the Shoshone-Bannock Tribes. Copies of all letters are included in Appendix B.

3.7.1. Affected Environment

Minidoka Dam was built between 1904 and 1906 and a temporary powerhouse was in use through early 1909. The powerplant was mostly completed in 1910. The original powerhouse building is concrete and measured 149 feet long, 50 feet wide, and 90 feet high (Reclamation n.d.). The powerplant was completed by 1913, housing five generating units, and was the first Federal hydroelectric plant in the Pacific Northwest (Wells 1974).

Two additional generating units were later added. Work to install a sixth generator began in 1926. Unit 6 was installed in a bay in the original powerplant that contained two water-wheel-driven exciters (Reclamation 1927). The original equipment was replaced by motor-driven exciters prior to 1927. Construction included removal of concrete within the powerhouse and dam by jackhammer and dynamite (Reclamation 1927).

In 1939, $500,000 was allotted for the construction of a new addition to the Minidoka Powerplant, consisting of a seventh hydroelectric generating unit (Unit 7) installed in a new wing of the existing powerplant (Reclamation 1940). The new wing is a reinforced concrete building, 58 feet long by 38 feet wide, constructed in an L-shape on the north corner of the original building. Construction began in 1940 and was finished in 1942.

Units 1 through 5 have been decommissioned, but Units 6 and 7 continue to produce power and have experienced regular maintenance to keep the powerhouse operational. While internal equipment has been upgraded and/or replaced over the years, the main structure has remained relatively unchanged since the 1940s.

The Minidoka Dam and Powerplant was placed on the National Register in 1974 at a statewide level of significance. The description lists the site in excellent condition, having no alterations and located at the original site (Wells 1974). Although the box for “Unaltered” was checked on the form, the narrative description of the physical appearance from the form recognizes the changes made to the structure:

> *The powerhouse was the earliest federal hydroelectric plant in the Pacific Northwest, completed in 1913 for a cost of $472,000. It originally had five generating units but two more were added in 1927 and 1940, bringing the total to the present level of seven units (Wells 1974).*

The areas of significance for the entire listing are identified as “Agriculture” and “Engineering”, and the period of significance for the powerhouse is listed as 1913. The original statement of significance from the form is as follows:

> *On the basis of a 1902 investigation by the United States Reclamation Service, Congress authorized construction of Minidoka Dam in 1904. Construction began September 17, and took more than a year. Part of the Burley canal system required pumping, so a 16,000 KWH electric plant was installed at the dam. Inadequate funding delayed completion of the $5,800,000 Minidoka canal project until 1909, creating serious problems for settlers there. Surplus power was available for public distribution, and some early experiments in space heating of houses and schools resulted from efforts to find local markets for Minidoka power. Senator George Norris of Nebraska used this experience with Minidoka power as a basis for justifying creation of the Rural Electric Administration.*

Evaluation

The Minidoka Powerplant is part of a larger National Register-listed site that also includes Minidoka Dam. The site is considered significant at the state level for its contributions to agriculture and engineering. The current project proposes to make changes to Units 1-4 by filling in an area behind the sluice gates with concrete to protect the overall structure from ongoing and future deterioration. The sluice gates have not been operational since at least the early 1940s and the actual sluice gates will remain in place. This action will not affect the overall engineering value of the structure and will increase the stability and longevity of the rest of the building. Nor will it affect the visible aspects of the building. Therefore, Reclamation has determined that this will result in no adverse effect to historic properties.

3.7.2. Environmental Consequences

Although the project will occur entirely within the Minidoka Dam and Powerplant National Register site, the project would result in no adverse effect to historic properties.

Alternative A – No Action

Reclamation has completed a Finding of Effect for the project and found that without the proposed changes, the integrity of the powerplant could be compromised by ongoing erosion and result in direct negative impacts to this National Register-listed site.

Alternative B – Proposed Action

Reclamation has completed a Finding of Effect for the project and found that the proposed repairs to the building would be in keeping with the existing structure, and the concrete plugs within Units 1-4 will help stabilize the building and protect it in future. There would be no direct or indirect negative effects on historic properties.

3.7.3. Cumulative Effects

One other known project would be occurring within the same resource area evaluated in this EA. The maintenance work at Units 8 and 9 at the Inman Powerplant is also occurring within the boundaries of the National Register site, but involves only non-contributing resources that were built outside the period of significance. Because the work involved in either of these projects does not affect characteristics that make the site significant to U.S. history, there are no cumulative effects to the Minidoka Dam and Powerplant National Register site.

3.8. Indian Sacred Sites

This section discusses the potential effect to Indian Sacred Sites. A record search and Finding of Effect were completed in January 2017. Additionally, letters were sent to the Shoshone-Bannock Tribes to determine if there were areas important to the tribes located within the APE. No response was received from the Shoshone-Bannock Tribes. Copies of all letters are included in Appendix B.

3.8.1. Affected Environment

Evidence of human occupation in southcentral Idaho dates as early as 14,500 years before the present (BP). The three major prehistoric cultural periods that have been identified for southeastern Idaho also apply to south-central Idaho:

- Early Prehistoric Period (15,000 to 7,500 BP)
- Middle Prehistoric Period (7,400 to 1,300 BP)
- Late Prehistoric Period (1,300 to 150 BP)

These periods reflect a shift over time from a highly mobile lifestyle involving hunting and gathering (such as seeds, roots, mammals, and fish) to reduced mobility and intensified use of certain highly productive resources (such as camas and salmon). The Study Area is within the Snake River basin, which traditionally was used by the Shoshone and Bannock Tribes for gathering plants for food and medicine, hunting, fishing, trading, and for ceremonial purposes.

The Shoshone and Bannock Tribes of the Fort Hall Reservation, Idaho, represent two linguistically distinct populations of people. The length of time these tribes have occupied southern Idaho is a subject of long-standing debate among scholars. Subsistence practices and lifestyles were similar to other Great Basin cultural groups. Because the environment could not sustain large populations, people moved from one resource to the next, relying on a wide variety of resources, including roots, berries, nuts, marmots, squirrels, rabbits, insects, large game, and fish. By the time of the earliest Euroamerican contact in the early 1800s, the Shoshone and Bannock Tribes had acquired the horse, making it easier to procure bison and other resources and to trade.

It is known that the area has been occupied since Paleoindian times, with the most recent occupants identified as the Shoshone, who are thought to have moved into the area after

about 1000 BP. No Indian Sacred Sites have been identified to Reclamation within the vicinity of the project area.

3.8.2. Environmental Consequences

Alternative A – No Action

No Indian Sacred Sites have been identified within the proposed APE. Under the No Action Alternative, there would be no direct, indirect, or cumulative effects to Indian Sacred Sites.

Alternative B – Proposed Action

No Indian Sacred Sites have been identified within the proposed APE. Under the Proposed Action Alternative, there would be no direct, indirect, or cumulative effects to Indian Sacred Sites.

3.8.3. Cumulative Effects

One other known project will be occurring within the same resource area evaluated in this EA, which is the maintenance work at Units 8 and 9 at the Inman Powerplant. Because no Indian Sacred Sites have been identified within the proposed APE, there would be no cumulative effects.

3.9. Indian Trust Assets

3.9.1. Affected Environment

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian Tribes and individuals. The Secretary of the Interior, acting as trustee, holds many assets in trust for Indian Tribes and individuals. Examples of trust assets are lands, minerals, grazing, hunting, fishing, and water rights. While most ITAs are on-reservation, they may also be found off-reservation on Federally managed unoccupied lands. The United States has a responsibility to protect and maintain rights reserved by or grated to Indian Tribes and Indian individuals by treaties, statutes, and executive orders. These are sometimes further interpreted through court decisions and regulations.

The Shoshone-Bannock Tribes, which are Federally recognized tribes located at the Fort Hall Indian Reservation in southeastern Idaho, have trust assets both on and off reservation lands. The Fort Bridger Treaty was signed and agreed to by the Bannock and Shoshone headman on July 3, 1868. The treaty states in Article 4 that members of the Shoshone-Bannock Tribes "…shall have the right to hunt on unoccupied Federal lands of the United States…" This has been interpreted to mean unoccupied Federal lands and to include fishing as a form of hunting.

The tribes included fishing after the case of *State of Idaho vs. Tinno*, an off-reservation fishing case in Idaho. The Idaho Supreme court determined that the Shoshone word for "hunt" also included "fish." Under *Tinno*, the court in 1994 reaffirmed in *Shoshone-Bannock*

Tribes vs. Fish and Game Commission Idaho the Tribal Members' rights to take fish off-reservation, pursuant to the Fort Bridger Treaty.

Other Federally recognized tribes are the Shoshone-Paiute of the Duck Valley Reservation, located on the Idaho/Nevada border. The tribe has cultural and religious interests in the area of the project, but the size and duration of this action would not disturb or impede on these interests.

3.9.2. Environmental Consequences

Alternative A – No Action

Under the No Action Alternative, there would be no direct, indirect, or cumulative effects to ITAs. The proposed maintenance would not be performed and the structure would remain in operation in its current condition, leading to further deterioration over time and greater eventual need for action. No known ITAs would be affected.

Alternative B – Proposed Action

Reclamation does not hold any ITAs, and does not know of any ITAs held in this area by any other agencies. Therefore, Alternative B would not affect any known ITAs such as land, minerals, water rights, monetary holdings, and gathering rights in the direct vicinity. As part of the scoping process, Reclamation requested information from Tribes that traditionally and currently use the area; however, no responses were received. While the lack of specific information about the area is not indicative of a lack of importance to Tribes, with no specific Tribal response, Reclamation concludes that there would be no adverse effects to any ITAs in the direct vicinity of the proposed action. Implementation of Alternative B would not affect tribal hunting and fishing rights outside the project area.

3.9.3. Cumulative Effects

There are no direct or indirect effects expected to this resource from the proposed action; therefore, there would be no anticipated cumulative effects to ITAs as a result of either Alternative.

3.10. Recreation

3.10.1. Affected Environment

Overview

The area below Minidoka Dam is managed by Reclamation, although the USFWS has enforcement authority within the Minidoka National Wildlife Refuge. There are two primary recreation access points in the area below the dam and spillway: the Minidoka Boat Ramp on the north side of the river, and Bishop's Hole on the south side of the river. Minidoka Boat Ramp facilities include a concrete boat ramp, dock, accessible route, and parking. A vault toilet is located across the road from the ramp; however, the parking and route do not meet current accessibility standards. The public accesses the area from the 300 North Road on the

north side and along the road to the unimproved Bishop's Hole site on the south side of the river. These access points offer easy access on improved roads, without an entrance fee. The river below the dam can also be accessed by boat up to the buoy line when flows are sufficient to navigate the channel.

Fishing

Fishermen harvest primarily rainbow trout from this stretch of the river, with an estimated 75 percent of fishing done with the intent to harvest, rather than catch and release (Bouffard 2009). Fishing is particularly good just below the powerplant on the south side of the river because the water is well-aerated and food is available in the form of fish injured while going through the turbines. Some fishermen access this area, adjacent from the bridge below the spillway, in conjunction with some cross-country travel. When the water is low, some people access the south side of the river just below the dam by crossing east from Bishop's Hole.

The north side of the river is one of the most popular places to fish below the dam due to the easy access from the road. Visitors park either at the Minidoka Boat Ramp or along East 300 North Road. Rainbow trout congregate in this area for the insect hatches (Bouffard 2009). The North Side Canal also has some rainbow trout, but fencing prevents fishermen from getting close enough to the existing headworks to access the most productive fishing in the canal.

Although the river freezes, fishermen do not ice fish on it. Instead, they bank fish into open water in several places along the river, such as the channel by the Minidoka Boat Ramp (Bouffard 2009). High water flows force people to bank fish, while low flows allow them to walk on gravel bars, or hop from rock to rock (Bouffard 2009). Among locals, the area below the spillway and dam are generally preferred over American Falls Reservoir, because it is closer and the bank fishing is at least comparable. All but a small portion in the west end of this area below the dam is included in the Minidoka National Wildlife Refuge. No game other than fish may be taken from this portion of the Refuge.

Although no formal visitation studies have occurred below the dam, it is estimated that approximately 80 percent of fishing visitation is local fishermen from Minidoka and Cassia Counties, 10 percent from other parts of the Snake River Plain, and 10 percent from out-of-state.

Birding

The area below the dam ranks high as a destination to watch unique birds, spring and fall migrations, and water birds in summer, especially Sabine's gulls. Sabine's gulls are transient in other areas in the region, but they reliably stay below the dam for about 2 weeks between late August and mid-September after nesting in the arctic. They are easily seen from the Minidoka Boat Ramp and Bishop's Hole, as are cormorants and pelicans (Bouffard 2009). Birders also enjoy observing ducks and geese in this area.

Several aspects of the area are particularly attractive to birds, especially open water in winter and abundant food sources including a high invertebrate population, the caddisfly hatch in July, and fish injured going through the turbines (Bouffard 2009). Minidoka Wildlife Refuge is an Important Bird Area of global significance.

In addition to Bishop's Hole and Minidoka Boat Ramp, good viewing and parking are available at the east end of East 300 North Road. Some birders drive the roads and park when they find birds they wish to observe. Others walk carrying binoculars or spotting scopes. Regardless of the flow level in the river, visitors use the same access points for birding. The only time the birds are normally disturbed is when there are several boats in the river (Bouffard 2009).

Although far more birding occurs along the river below the dam because of the hatch, the biodiversity, and the ease of access, the area on the south side below the spillway is popular from July through September for observation of shorebirds that like mudflats. Typical water level fluctuations do not significantly affect the availability of shorebird observation opportunities below the existing spillway because there is nearly always some water present (Bouffard 2009).

Birders from Minidoka and Cassia counties are estimated to make up 70 percent of the birders below the dam. Another 20 percent of the birders are estimated to come from elsewhere in the Snake River Plain, with the balance from out-of-state. Birding below the dam and in the park historically has experienced steady increases in popularity (Bouffard 2009).

Other Activities

In addition to fishermen and birders, visitors below the dam also include sightseers, photographers, and boaters. Horseback riding does occur in the area, but not close along the river. The area below the dam, including the affected area, is almost entirely within the Minidoka Wildlife Refuge, which is closed to hunting and game retrieval except in designated areas on the south side and east end of Lake Walcott. Therefore, effects to these activities were not analyzed for this assessment.

Visitation

Visitation below the dam cannot be definitively divided between fishermen, birders, and other visitors. Visitation is estimated based on the number of vehicles at the various parking areas multiplied by a range of 2 to 2.5 visitors per vehicle average. During the peak season between May 1 and September 15, it is estimated that there are typically 6 to 10 people on weekdays and 9 to 20 people on weekend days at the Minidoka Boat Ramp. Observed visitation at Bishop's Hole is 10 to 12 people on weekdays and 15 to 25 people on weekend days. Many of these people move to other locations periodically during the day. Observations have not been made as to how long the average visitor stays in the area below the dam (Bouffard 2009). Visitation on the south side below the new spillway (completed in 2015) appears to have increased significantly due to mitigation efforts that improved the

access and fishery. Reclamation employees have observed as many as 27 fishermen on the new bridge and another 10 on the bank below at one time, on any given weekday during the summer of 2017.

Both Minidoka Boat Ramp and Bishop's Hole accommodate fishing, birding, and launching boats. Boaters often have drivers shuttle them to the launch point and leave their vehicles and trailers at take-out points downstream, so their vehicles would not be included in visitation estimates unless they were unloading prior to floating at the time visitation counts were made.

During the use season, there are typically 6 to 10 people on weekdays and 9 to 20 people on weekend days at the east end of East 300 North Road where parking is available. Additional vehicles are often parked farther west, along the East 300 North Road below the Minidoka Boat Ramp (Bouffard 2009).

Access

The proposed project's affected area is directly adjacent to the powerplant. Public access is restricted at the project site in accordance with 43 CFR, Subtitle B, Ch. 1 Part 423 – Public Conduct on Bureau of Reclamation Facilities, Lands and Waterbodies.

The shoreline area is fenced and posted to prevent access to the dam and powerplant facilities, and a buoy line lies across the river below the powerplant. These measures allow power boats to run upstream on the river but limit their proximity to the dam facilities. Pedestrians may access the river up to the buoy line.

Effect Indicators

Many factors influence the quality and abundance of water and water-associated recreation adjacent to the proposed project's affected area. These factors include river water levels, access to desired recreation activity locations, river and spillway area water levels related to safety, fishery productivity, user-conflicts, and others. Recreation effect indicators are determined by evaluating projected access availability and desirability of visitation in the geographic area for each popular activity under each alternative.

Effect indicators for recreation vary by location. If recreationists are not able to pursue recreational activities in what have been historically desirable locations, visitation would likely be displaced to other locations in proximity to the project. If no desirable locations are known to exist nearby, visitation likely would be displaced outside the general area.

The ability to fish, bird watch, and boat in the river in the area adjacent to and below the power plant was used as an effect indicator for this analysis of recreation effects.

3.10.2. Environmental Consequences

Alternative A – No Action

No effects to recreation are anticipated under the No Action alternative. Recreationists would continue to use the area as they have in the past, experiencing the same general fluctuations

in river water levels and similar access and fishery conditions as under historic normal dam and powerplant operations.

Alternative B – Proposed Action

Construction Effects

The project site is located within a restricted area. Although it would be dewatered during construction, due to restricted access, the general public will not experience any loss of the choice of fishing locations or available access within the immediate adjacent area.

Construction-related effects such as noise, dust, construction traffic, and displacement of aquatic or terrestrial species that are normally present would likely affect the north side of the river more than the south side. Recreational visitation along both sides of the river immediately adjacent to the project site may be temporarily affected due to noise (see Section 3.6 for a more in-depth discussion of noise effects). Any effects considered intolerable to fishermen, birders, or others seeking solitude during the project construction would likely influence them to move temporarily to other locations farther downstream from the project site to avoid hearing construction noise while recreating.

Operational Effects

Travel between the East 300 North Road and the dam facility would likely temporarily increase during construction due to transport of materials and workers.

3.10.3. Cumulative Effects

Activities for the Minidoka Boat Ramp Rehabilitation Project, located approximately ¼-mile below the power plant, are planned to begin in the fall of 2018. If both projects were to take place at the same time, effects to recreation in the area below the powerplant along the river could occur due to a temporary loss of parking at the boat ramp access point.

However, the boat ramp rehabilitation is planned to be completed almost a year before construction for the proposed action would be planned to begin. Therefore, no cumulative effects to recreational activities are expected.

3.10.4. Mitigation

During construction, signs would be posted with project information and/or maps showing the availability of recreation opportunity alternatives outside the affected area to help guide recreationist access.

3.11. Socioeconomics

The socioeconomic character of an area includes its population and economic activity. Socioeconomic changes may occur when a project directly or indirectly changes any of these elements. This section discusses socioeconomic resources within the human environment, particularly population and economic activity that could be affected by the proposed alternative. Population is described in terms of the size, rate of growth, and distribution of

people who live and work in the area. Economic activity is described in terms of employment distribution, personal income, and business growth.

3.11.1. Affected Environment

Population

The population of Minidoka County, Idaho, is estimated at 20,729, according to U.S. Census Bureau (Census Bureau) 2017 estimates (Census Bureau 2017a). This is an increase from 2005, when the population was 18,650 residents, representing an average annual rate of growth of 0.93 percent. In comparison, the nationwide population growth rate has averaged just over 0.7 percent per year in the last decade (Census Bureau 2017b). Minidoka County is the 14th largest county of the 44 counties in Idaho. Rupert is the county seat and has the largest population of the county, with a population of 5,813 people (Census Bureau 2017a). The county is unique in that it is bordered to the south by the Snake River and to the north by lava beds.

Economic Activity

Minidoka County is often merged with neighbor Cassia County for economic analysis, and is jointly referred to as the Mini-Cassia area, according to the Idaho Department of Labor (IDL) (2018). The IDL reported a 2.7 percent unemployment rate in Minidoka County in 2017, compared to 2.9 percent unemployment statewide and 4.1 percent unemployment nationwide in the same year (IDL 2018). Unemployment in Minidoka County has generally trended down over the last decade, dropping to the current rate from a spike of 7.9 percent in 2006, following the 2003 closure of the J.R. Simplot Co. potato processing plant in Heyburn (IDL 2018). Seasonal employment is prominent within Minidoka County, with a core reliance on fresh pack potato operations, farm jobs, and sugar and potato processing. The main contributors to economic growth for the area are a robust agricultural base and continuing construction activity in the Mini-Cassia area, as well as more recent economy diversification, including durable manufacturing and retail trade tied to agriculture (IDL 2018).

Per capita income for the state of Idaho is lower than the national average, and income in Minidoka County has consistently remained lower than statewide averages. In 2016, the average per capita income in Minidoka County was $37,542, while the average per capita income was $39,470 statewide and $49,246 nationwide. Per capita incomes in Minidoka County averaged 94 percent of those in Idaho over the last 10 years, and were, on average, 75 percent of the per capita income nationwide over the same 10-year time span (IDL 2018).

3.11.2. Environmental Consequences

Alternative A – No Action

Under the No Action Alternative, the proposed alternative would not take place. The existing conditions of Unit 7 structure would continue to worsen over time. However, the socioeconomic climate would not be affected by this lack of action.

Alternative B – Proposed Action

Under the Proposed Action Alternative, the need for general and specialized labor for rehabilitation work could bring short-term, minor economic gains to the local area through the construction contracting process. Due to the project's limited size and short duration, no significant changes to local demographics or employment and income trends are expected to occur due to the proposed project.

3.11.3. Cumulative Effects

The ongoing maintenance work on Units 8 and 9 of the Inman Powerplant and the boat ramp replacement project slated to occur downstream in the fall of 2018 are both expected to be completed before the proposed action would occur. Both of these projects may be expected to have minor, insignificant, positive effects to the local economy and labor force through the construction and contracting process. Taken cumulatively, the effects of these individual projects may cause minor economic gains to the local area.

3.12. Environmental Justice

EO 12898 (59 FR 7629) requires Federal agencies to achieve environmental justice by addressing disproportionately high and adverse human health and environmental effects on minority and low-income populations. To determine the characteristics of the affected populations, the Federal agency examines the demographics of the affected area to determine if minority (including Native Americans) and/or low-income populations are present. If present, the agency must determine if implementation of the Proposed Action would cause disproportionately high and adverse human health or environmental effects on the populations.

3.12.1. Affected Environment

Table 8 summarizes the racial demographics present in Minidoka County, Idaho, in comparison to overall demographics in the State of Idaho. Population estimates provided by the Census Bureau were used to identify these populations. White racial categories comprise the highest percentage for Minidoka County, as well as in the state of Idaho (Census Bureau 2017a).

By definition from the Federal Office of Management and Budget, race and Hispanic or Latino origin are two separate categories. People who report themselves as Hispanic and Latino can be of any race. Therefore, in Table 8, the number of Hispanics or Latinos is not added to the totals of the race columns. For example, Hispanics and Latinos who are white are counted in the total of white in the race table, and Hispanics who are black or African American are counted in that race category.

Table 8. Summary of racial populations in Minidoka, County and State of Idaho

U.S. Census Bureau 2017 Statistics	Minidoka County	Idaho
2015 Total Population Estimate	20,729	1,716,943
White, percent	94.4	93.3
Black or African American, percent	0.8	0.8
American Indian and Alaska Native, percent	2.3	1.8
Asian, percent	0.6	1.5
Native Hawaiian or Pacific Islander, percent	*	0.2
Two or more races, percent	1.8	2.4
Hispanic or Latino, percent	34.8	12.3
White alone, not Hispanic or Latino, percent	62.5	82.4

*Value greater than zero, but less than 0.5 percent

Based on this review, Hispanic or Latino populations represent a substantial percentage of the project area population. Due to the fact that the proposed action is a small localized action with an area of effect outside of significantly populated areas, there will be no significant effect to any one particular minority group, including Hispanic and Latino populations.

Low-income populations are identified by several socioeconomic characteristics. Specific characteristics used in this description of the existing environment, as categorized by the Census Bureau, are income (per capita income, and median household income) and percentage of the population below poverty. Table 9 shows income and poverty rate data for Minidoka County and the State of Idaho from 2012 to 2016 (Census Bureau 2017a, IDL 2018).

Table 9. Income and poverty data for Minidoka County and the State of Idaho, 2012-2016 (listed in 2016 dollars)

Geographic Area	Average Per Capita Income	Median Household Income	Persons at or Below Poverty Level (percent)
Minidoka County	$37,542	$46,147	15.8%
State of Idaho	$39,470	$49,174	14.4%

3.12.2. Environmental Consequences

Alternative A – No Action

The No Action Alternative would not alter the current regional environmental justice status based on the presented information above, and therefore would have no environmental justice effects.

Alternative B – Proposed Action

The Proposed Action Alternative has been reviewed through census data and application of the EPA's EJSCREEN tool[3]. No minority or low-income groups, as identified for further analysis by Executive Order 12898, were identified that would be disproportionately affected by health or environmental effects as the results of the implementation of the Proposed Action Alternative. Because the proposed action is a small localized action with an area of effect outside of significantly populated areas, there will be no significant effect to the greater area's low-income populations.

3.12.3. Cumulative Effects

The ongoing maintenance work on Units 8 and 9 of the Inman Powerplant and the boat ramp replacement project slated to occur downstream in the fall of 2018 are expected to be completed before the proposed action would occur. Neither of these projects are expected to have significant disproportionate cumulative effects to any particular minority and/or low-income population. Taken cumulatively, the minor effects of these individual projects would not be expected to result in significant environmental justice effects.

Chapter 4. Consultation and Coordination

4.1. Agency Consultation and Coordination

In compliance with Section 106 of the NHPA of 1966 (as amended 1992), Reclamation consulted with the Idaho SHPO to identify cultural and historic properties in the area of potential effect. Consultation was initiated in February 2017, and SHPO concurred with the finding of no adverse effect to historic properties on March 2, 2017.

Reclamation mailed scoping letters with a project information package enclosed on December 22, 2017, to agency recipients. Response comments received are summarized in Table 10 below, and copies of the mailings, including recipients and full responses, are included in Appendix C.

[3] The EPA's EJSCREEEN tool is available online at https://ejscreen.epa.gov/mapper/.

Table 10. Summaries of comments received in response to agency scoping letters

Commenter	Comment summary and date of receipt
IDEQ	• Address Impaired Water designation of this Snake River assessment unit • Address Lake Walcott TMDL • Address EPA Construction General Permit and Stormwater Pollution Prevention Plan • Include language for implementation of BMPs • Include language on management of petroleum products/hazardous/toxic materials and contamination prevention as applicable • Include 404 permit provision • Inform and coordinate with IDFG, and • Discuss fugitive dust emissions controls *(comment received 1/24/2018)*
USFWS – Minidoka NWR	• No additional environmental or safety concerns identified *(comment received 1/22/2018).*

4.2. Tribal Consultation and Coordination

Reclamation mailed the following Tribal recipients scoping letters with a project information package enclosed (Appendix D):

- Shoshone-Bannock Tribe—December 15, 2017
- Shoshone-Paiute Tribe—December 15, 2017

No responses or concerns were brought forward by the Tribes during the scoping period.

Chapter 5. **Literature Cited**

Parenthetical Reference	Bibliographic Citation
43 CFR	43 CFR Part 423 – Public Conduct on Bureau of Reclamation Facilities, Lands and Water Bodies, Subpart B- Areas Open and Closed to Public Use. Office of the Secretary of the Interior.
Bouffard 2009	Bouffard, Steve. 2009. Retired U.S. Fish and Wildlife Service. Personal communication. March 26.
Brooks pers. comm. 2018	Brooks, Keith. 2018. Civil Engineer. Personal Communication. March 2018.
Gates and Kerans 2010	Gates, K.K. and B.L. Kerans. 2010. Snake River Physa, *Physa (Haitia) natricina*, Survey and Study. Final Report to U.S. Bureau of Reclamation. Agreement 1425-06FC1S202. October 5, 2010.87 pp.
Hess et al. 2002	Hess, Jeffrey, D. Hess, C. Roise, A. Christman, and C. Fraser. 2002. Minidoka Dam, Powerplant, and South Side Pump Division. Historic American Engineering Record (HAER No. ID-16), Minidoka and Cassia Counties, Idaho. Prepared for U.S. Bureau of Reclamation, Pacific Northwest Regional Office, Boise, Idaho.
Hughes 1999	Hughes, J. M. 1999. Yellow-billed Cuckoo (*Coccyzus americanus*). Page 408 in A. Poole and F. Gill, editors. The Birds of North America. Philadelphia, Pennsylvania.
IDEQ 2008	Idaho Department of Environmental Quality. 2008. Rules of the Department of Environmental Quality, IDAPA 58.01.02, "Water Quality Standards." Boise, Idaho.
IDEQ 2017	Idaho Department of Environmental Quality. 2017. Idaho's 2014 Integrated Report. February 2017. Boise, Idaho.
IDEQ 2018	Idaho Department of Environmental Quality. 2018. Final Unit Status Report 2014. IDEQ Online GIS Map: http://mapcase.deq.idaho.gov/wq2014/scripts/adb2014.aspx?WBIDSEGID=ID17040209SK004L_0L. Accessed on Feb. 9, 2018.
IDFG 2007a	Idaho Department of Fish and Game. 2007c. Fisheries Management Plan 2007 – 2012. Boise, ID
IDFG 2007b	Idaho Department of Fish and Game. 2007b. Minidoka spillway fish assessment. Cooperative Agreement No. 1425-06FC1S1230. Completion Report. Boise, Idaho.
IDL 2018	Idaho Department of Labor. 2018. Minidoka County Workforce Trends – January 2018. http://labor.idaho.gov/publications/lmi/pubs/MinidokaProfile.pdf (Accessed 30 March 2018).

Parenthetical Reference	Bibliographic Citation
Illingworth and Rodkin 2006	Illingworth and Rodkin 2006 Illingworth and Rodkin, Inc. 2006. Montezuma Wind Project Noise Technical Report. Solano County, California. Petaluma.
Martin and Meuleman 1989	Martin, R. C., and G.A. Meuleman. 1989. *Minidoka Dam Wildlife Impact Assessment. Final Report. Proj. 88-110.* Bonneville Power Administration.
Meuleman 1991	Meuleman, G.A. 1991. *Minidoka Dam Wildlife Impact Assessment.* Bonneville Power Administration
OSHA 2006	U.S. Department of Labor Occupational Safety and Health Administration Directorate of Standards and Guidance Office of Maritime An OSHA Guidance Document December 2006 https://www.osha.gov/dts/maritime/standards/guidance/shipyard_guidance.html#PPE
Reclamation n.d.	Bureau of Reclamation, no date. Project Histories and Reports of Reclamation Bureau Projects: Minidoka Project, Idaho 1912-1919, Volumes 4-5, Project History. On file at the National Archives.
Reclamation 1927	Bureau of Reclamation. 1927. Annual Project History Report of Construction and Operation and Maintenance Minidoka Project Idaho, Volume XXI, Calendar Year, 1927. On file at the US Bureau of Reclamation, Upper Snake Field Office, Heyburn, Idaho.
Reclamation 1940	Bureau of Reclamation. 1940. Annual Project History, Report of Construction and Operation and Maintenance for Minidoka Project, Idaho, Vol. 34, Calendar Year, 1940. On file at the US Bureau of Reclamation, Upper Snake Field Office, Heyburn, Idaho.
Reclamation 1996	Bureau of Reclamation. 1996. *A Description of Bureau of Reclamation System Operations Above Milner Dam. The Upper Snake River Basin.* Unpublished report. Boise, Idaho. January.
Reclamation 2010	Bureau of Reclamation. 2010. *Final Environmental Impact Statement: Minidoka Dam Spillway Replacement*. Minidoka Project, Idaho. August 2010.
Reclamation 2017	Bureau of Reclamation. 2017. *Final Environmental Assessment – Minidoka Boat Ramp Replacement, Minidoka County, Idaho*. Snake River Area Office, Boise, Idaho. January 2017.
Reclamation 2018	Bureau of Reclamation. 2018. *2017 Annual Report – Bureau of Reclamation Report on Monitoring and Implementation Activities Associated with the USFWS 2005 Biological Opinion for Operation and Maintenance of the Bureau of Reclamation Projects in the Snake River Basin above Brownlee Reservoir*. Bureau of Reclamation Snake River Area Office, Boise, Idaho.

Parenthetical Reference	Bibliographic Citation
Taylor 1982	Taylor, D.W. 1982. Status report on Snake River physa snail. Prepared for the U.S. Fish and Wildlife Service. July 1, 1982.
Census Bureau 2017a	United States Census Bureau. 2017. Minidoka County and State of Idaho. https://www.census.gov/quickfacts/fact/table/ID,minidokacountyidaho/PST045217 (accessed March 28, 2018).
Census Bureau 2017b	United States Census Bureau. 2017. American Fact Finder. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF (accessed March 28, 2018).
USDOL 2006	U.S. Department of Labor Occupational Safety and Health Administration Directorate of Standards and Guidance Office of Maritime An OSHA Guidance Document. December 2006. https://www.osha.gov/dts/maritime/standards/guidance/shipyard_guidance.html#PPE (accessed Feb 14, 2018).
USFWS 1985	U.S. Fish and Wildlife Service. 1985. *Sensitive Species Management Plan for the Western Yellow-billed Cuckoo*. Region 1.
USFWS 1989	U.S. Fish and Wildlife Service. 1989. *Wildlife Habitat Management Plan for Minidoka North Side Pumping Division Extension Project, Idaho*. Prepared for U.S. Bureau of Reclamation and Idaho Department of Fish and Game
USFWS 2002	U.S. Fish and Wildlife Service. 2002. Minidoka National Wildlife Refuge: Watchable Wildlife. Minidoka National Wildlife Refuge. Rupert, Idaho.
USFWS 2015	U.S. Fush and Wildlife Service. 2015. Biological Opinion for the Bureau of Reclamation, Operations and Maintenance in the Snake River Basin above Brownlee Reservoir. Idaho Fish and Wildlife Office, Boise, Idaho. May 08, 2015.
Wells 1974	Wells, Merle W. 1974. National Register of Historic Places Inventory – Nomination Form IH0037842: Minidoka Dam and Power Plant. https://npgallery.nps.gov/nrhp/AssetDetail?assetID=7a105298-c1ea-437c-b093-b2275d1aa9a2 (accessed December 28, 2016).
Winslow et al. 2011	Winslow, D.K., B. Bean, and K. Gates. 2011. Snake River physa (Physa natricina) substrate selection in the Snake River, Idaho. Idaho Fish and Wildlife Service, Boise, Idaho.

Appendix A – Threatened and Endangered Species Data: USFWS Information for Planning and Consultation (IPaC) Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Idaho Fish And Wildlife Office
1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657
Phone: (208) 378-5243 Fax: (208) 378-5262

In Reply Refer To:
Consultation Code: 01EIFW00-2018-SLI-0552
Event Code: 01EIFW00-2018-E-01123
Project Name: Minidoka Unit 7 Maintenance

February 12, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Please note: The IPaC module for producing a list of proposed and designated critical habitat is currently incomplete. At this time, we ask that you use the information given below to determine whether your action area falls within a county containing proposed/designated critical habitat for a specific species. If you find that your action falls within a listed county, use the associated links for that species to determine if your action area actually overlaps with the proposed or designated critical habitat.

Canada Lynx (*Lynx canadensis*) - *Designated February 24, 2009.*
Counties: Boundary County.

Federal Register Notice: http://www.gpo.gov/fdsys/pkg/FR-2009-02-25/pdf/E9-3512.pdf#page=1
Printable Maps:
http://www.fws.gov/mountain-prairie/species/mammals/lynx/criticalhabitat_files/

20081222_fedreg_unit3_draft.jpg
GIS Data: http://criticalhabitat.fws.gov/docs/crithab/zip/lunx_ch.zip
KML for Google Earth: (None Currently Available)

Selkirk Mountains Woodland Caribou (*Rangifer tarandus Caribou*) - *Proposed November 30, 2011.*
Counties: Bonner and Boundary Counties.

Federal Register Notice: http://www.fws.gov/idaho/home/2011-30451FINALR.pdf
Printable Maps: http://www.fws.gov/idaho/home/Map1_sub1_150.pdf
GIS Data: (None Currently Available)
KML for Google Earth: (None Currently Available)

Bull Trout (*Salvelinus confluentus*) - *Designated September 30, 2010.*
Counties: Adams, Benewah, Blaine, Boise, Bonner, Boundary, Butte, Camas, Clearwater, Custer, Elmore, Gem, Idaho, Kootenai, Lemhi, Lewis, Nez Perce, Owyhee, Shoshone, Valley, and Washington Counties.

Federal Register Notice: http://www.gpo.gov/fdsys/pkg/FR-2010-10-18/pdf/2010-25028.pdf#page=2
Printable Maps: http://www.fws.gov/pacific/bulltrout/CH2010_Maps.cfm#CHMaps
GIS Data: http://criticalhabitat.fws.gov/docs/crithab/zip/bulltrout.zip
KML for Google Earth: http://www.fws.gov/pacific/bulltrout/finalcrithab/BT_FCH_2010_KML.zip

Kootenai River White Sturgeon (*Acipenser transmontanus*) - *Designated July 9, 2008.*
Counties: Boundary County.

Federal Register Notice: http://www.gpo.gov/fdsys/pkg/FR-2008-07-09/pdf/E8-15134.pdf#page=1
Printable Maps: (None Currently Available)
GIS Data: http://criticalhabitat.fws.gov/docs/crithab/zip/fch_73fr39506_acit_2009.zip
KML for Google Earth: (None Currently Available)

Slickspot Peppergrass (*Lepidium papilliferum*) - Proposed May 10, 2011. Counties: Ada, Canyon, Elmore, Gem, Owyhee, and Payette Counties.

Federal Register Notice: http://www.gpo.gov/fdsys/pkg/FR-2011-10-26/pdf/2011-27727.pdf
Printable Maps: http://www.fws.gov/idaho/Lepidium.html
GIS Data: (None Currently Available)
KML for Google Earth: (None Currently Available)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in

the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Idaho Fish And Wildlife Office
1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657
(208) 378-5243

Project Summary

Consultation Code: 01EIFW00-2018-SLI-0552

Event Code: 01EIFW00-2018-E-01123

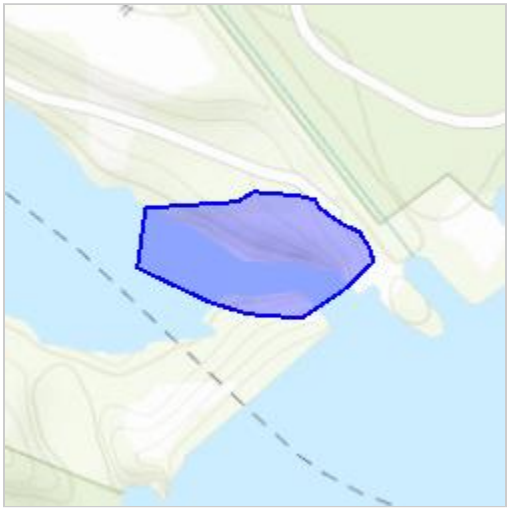
Project Name: Minidoka Unit 7 Maintenance

Project Type: DAM

Project Description: Reclamation is proposing to remove and replace components of three bulkhead gates in the Minidoka Unit 7 Draft Tube Bulkhead structure and the addition of concrete reinforcement plugs downstream of four existing sluice gates. This would include the removal, offsite disposal, and replacement of three existing roller-style outlet gates, gate channels, actuators, seals, sill plates, operators, and other structural steel (e.g., railings) in the Unit 7 Draft Tube Bulkhead structure. An area up to 2800 square feet would be dewatered for this work.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.67023102417991N113.48411214852183W



Counties: Minidoka, ID

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix B – Cultural Consultation and Coordination: Reclamation's letters to Tribes requesting identification of areas of concern, and Idaho State Historic Preservation Office's response to Reclamation's consultation

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:

USF-1219
LND/ENV-1.10

FEB 0 3 2017

VIA FEDERAL EXPRESS

Ms. Mary Anne Davis
Associate State Archaeologist
State Historic Preservation Office
210 Main Street
Boise, ID 83702

Subject: Invitation to Consult on the Proposed Repairs at the Minidoka Power Plant, Minidoka Project, Idaho

Dear Ms. Davis:

The Bureau of Reclamation's Upper Snake Field is proposing to replace and modernize equipment within the switchyard at the Minidoka Power Plant. The power plant is located in T.9 S, R.25 E, Section 1, Lake Walcott West, Idaho, 1:24,000 U.S. Geological Survey Quad Sheet. At this time, Reclamation is consulting concerning the area of potential effect (APE) and a finding of No Adverse Effect to Historic Properties.

The Minidoka Dam and Power Plant was listed in the National Register of Historic Places in 1974 for its contributions to agriculture and engineering. The proposed project is designed to repair and shore up the power plant protecting it from ongoing erosion processes. The effects to the original power plant will be beneficial to the overall structure and will not change how the building is operated. The remainder of the work at Unit 7 is in a part of the building that is outside the period of significance for the site. Reclamation has determined that this will result in No Adverse Effects to Historic Properties since the overall repairs to the building will be in keeping with the existing structure and the concrete plugs within Units 1-4 will help stabilize the building and protect it in the future.

In accordance with procedures specified in 36 CFR § 800, Reclamation requests your concurrence with our APE and the determination that modernizing this equipment will have No Adverse Effect to Historic Properties. Please direct any questions to Ms. Nikki Polson, Upper Snake Field Office Archaeologist, at 208-678-0461, extension 13, or by email at npolson@usbr.gov.

Sincerely,

Roland K. Springer
Area Manager

Enclosure

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:

FEB 0 3 2017

USF-1219
LND/ENV-1.10

VIA FEDERAL EXPRESS

Honorable Blaine Edmo
Chairman
Fort Hall Business Council
Shoshone-Bannock Tribes
1 Pima Drive
Fort Hall, ID 83203-0306

Subject: Invitation to Consult on the Consult on the Proposed Repairs at the Minidoka Power Plant, Minidoka Project, Idaho

Dear Mr. Chairman:

The Bureau of Reclamation's Upper Snake Field is proposing to replace and modernize equipment within the switchyard at the Minidoka Power Plant. The power plant is located in T.9 S, R.25 E, Section 1, Lake Walcott West, Idaho, 1:24,000 U.S. Geological Survey Quad Sheet. At this time, Reclamation is requesting any information concerning cultural resources known to your Tribe that may be affected by this project.

The Minidoka Dam and Power Plant was listed in the National Register of Historic Places in 1974 for its contributions to agriculture and engineering. The proposed project is designed to repair and shore up the power plant protecting it from ongoing erosion processes. The effects to the original power plant will be beneficial to the overall structure and will not change how the building is operated. The remainder of the work at Unit 7 is in a part of the building that is outside the period of significance for the site. Reclamation has determined that this will not adversely affect the eligibility of the dam and power plant since the overall repairs to the building will be in keeping with the existing structure and the concrete plugs within Units 1-4 will help stabilize the building and protect it in the future.

Please advise this office as to whether the Shoshone-Bannock Tribes wish to join in this consultation by contacting me directly at 208-383-2246 or via email at rspringer@usbr.gov. Or you may contact my staff archaeologist, Ms. Nikki Polson, at 208-678-0461, extension 13, with any questions regarding this letter or the enclosure.

Sincerely,

Roland K. Springer
Area Manager

Enclosure

cc: See next page.

cc: Ms. Yvette Tuell
Environmental Program Manager
Shoshone-Bannock Tribes
1 Pima Drive
Fort Hall, ID 83203-0306

Ms. Carolyn B. Smith
Cultural Resources Coordinator
Shoshone-Bannock Tribes
1 Pima Drive
Fort Hall, ID 83203-0306
(w/encl to each)

www.history.idaho.gov

Idaho State Historical Society

C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Membership and Fund Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 514-2310
Fax: (208) 334-2774

Historical Museum and Education Programs
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites
Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
• Franklin Historic Site
• Pierce Courthouse
• Rock Creek Station and
• Stricker Homesite

Old Penitentiary
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

DATE: March 2, 2017
TO: Roland K. Springer
FEDERAL AGENCY: Bureau of Reclamation
PROJECT NAME: Proposed Repairs at the Minidoka Power Plant, Minidoka Project, Idaho
PROJECT NO: 17-USFO-CR-006

Section 106 Evaluation

X	The field work and documentation presented in this report meet the Secretary of the Interior's Standards.
	No additional investigations are recommended. Project can proceed as planned.
	Additional information is required to complete the project review. (See comments below.)
	Additional investigations are recommended. (See comments below).

Identification of Historic Properties (36 CFR 900.4):

	No historic properties were identified within the project area.
	Property is not eligible. Reason:
	Property is eligible for listing in the National Register of Historic Places.
	Criterion: _A _ B_ C _ D Context for Evaluation:
	No historic properties will be affected within the project area.

Assessment of Adverse Effects (36 CFR 800.5):

X	Project will have *no adverse effect* on historic properties.
	Property will have an *adverse effect* on historic properties. Additional consultation is required.

Comments: We consider the improvement to the power plant in 1942 to be a contributing element of the plant. Sometime it might be a good idea to update the National Register nomination to reflect this information. Feel free to contact me at 208-788-7472 if you have any questions about our comments.

// Mary Anne Davis // **March 2, 2017**

Mary Anne Davis, Associate State Archaeologist **Date**
State Historic Preservation Office

Cc: Nikki Polson, BOR

Appendix C – Public and Agency Consultation and Coordination: Reclamation's public scoping letters with enclosed information package

7-1596B (9-08)
Bureau of Reclamation

OFFICIAL FILE COPY		
DATE	SURNAME	CODE
12/19	via email Goodrich	1216
12/19	via email Taylor	1200
12/19		1000
		7115
Classification		
Project		
Control No.		
Folder I.D.		

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:
SRA-1216
2.1.4.13

DEC 2 2 2017

Subject: Request for Public Comments Regarding the Proposed Removal, Replacement, and Reinforcement of Components of the Minidoka Unit 7 Bulkhead Structure at Minidoka Dam, Minidoka County, Idaho

Dear Interested Party:

The Bureau of Reclamation is proposing to perform construction activities to remove, replace, and reinforce components of the Minidoka Unit 7 bulkhead structure at Minidoka Dam, Minidoka County, Idaho. The purpose of this letter is to inform interested and affected public of the proposal and to solicit comments pursuant to the National Environmental Policy Act of 1969. Enclosed is a Scoping Information Package describing the project proposal.

Scoping is a public involvement process used to determine the scope of issues to be addressed and identify issues related to a proposed action. Analysis of the proposal is ongoing and will be documented in an environmental assessment with an estimated completion in the summer of 2018. Comments received in response to this solicitation will be used to identify potential environmental issues related to the proposed action and to identify alternatives to the proposed action that meet the purpose of and need for the project.

Please help us identify important issues and concerns regarding the proposed action by providing your written comments by **January 22, 2018**. Written comments should be submitted electronically to sra-nepa-comments@usbr.gov, or mailed or hand-delivered to:

Ms. Amy Goodrich
Natural Resources Specialist
Bureau of Reclamation Snake River Area Office
230 Collins Road
Boise, Idaho 83702

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

If you have additional questions about this proposal or its analysis, please contact Ms. Amy Goodrich, Natural Resources Specialist, at 208-383-2250.

Sincerely,

ROLAND K SPRINGER

Roland K. Springer
Area Manager

Enclosure

WBR:AGoodrich:KHennequin:12/19/2017:208-383-2250:SRA-1216
P:\NEPA\NEPA Projects\EA\Minidoka Unit 7\Scoping\Final Docs\PUBLIC LETTERS\Minidoka_Unit_7_Public Scoping Letter_20171207.docx

Identical Letter Sent To:

Ms. Tonya Page
Clerk of the District Court
Minidoka County
P.O. Box 368
Rupert, ID 83350

Kerry McMurray
Administrator
Cassia County
1459 Overland Ave., Room 210
Burley, ID 83318

Mr. Jeffery Krueger
Manager
USFWS - Minidoka NWR
961 Minidoka Dam Road
Rupert, ID 83350

Mr. Dave Hopper
Biologist
USFWS - Ecological Services Boise
1387 S Vinnel Way, Suite 368
Boise, ID 83709

Tracy Casselman
Manager
USFWS - Regional Office in Chubbuk
4425 Burley Drive, Suite A
Chubbuck, ID 83202

Mr. Brian Olmstead
Manager
Twin Falls Canal Company
P.O. Box 326
Twin Falls, ID 83303

Mr. Alan Hansten
Assistant Manager
North Side Canal Co. Ltd.
921 North Lincoln Ave.
Jerome, ID 83338

Mr. Walt Mullins
Manager
Milner Irrigation District
5294 East 3610 North
Murtaugh, ID 83344

Mr. Dean Johnson
Idaho Department of Lands
8355 W. State St.
Boise, ID 83714

Kiley Mulholland
Idaho Dept. Env. Quality (DEQ)
1410 N. Hilton
Boise, ID 83706

Continued on next page.

Continued from previous page.

Mr. Mike McDonald
Biologist
Idaho Fish and Game
324 South 417 East, Suite 1
Jerome, ID 83338

Mr. John Lind
General Manager
Burley Irrigation District
246 East 110 South
Burley, ID 83318

Mr. Dan Davidson
General Manager
Minidoka Irrigation District
98 West 50 South
Rupert, ID 83350

Mr. Dan Temple
Manager
A&B Irrigation District
P.O. Box 675
Rupert, ID 83350

Mr. Robert Brochu
U.S. Army Corps of Engineers
1820 E 17th Street
Idaho Falls, ID 83404

Mr. Lynn Harmon
Manager
American Falls Reservoir District No. 2
409 North Apple St.
Shoshone, ID 83352

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

DEC 2 2 2017

IN REPLY REFER TO:

SRA-1216
2.1.4.13

Subject: Request for Public Comments Regarding the Proposed Removal, Replacement, and Reinforcement of Components of the Minidoka Unit 7 Bulkhead Structure at Minidoka Dam, Minidoka County, Idaho

Dear Interested Party:

The Bureau of Reclamation is proposing to perform construction activities to remove, replace, and reinforce components of the Minidoka Unit 7 bulkhead structure at Minidoka Dam, Minidoka County, Idaho. The purpose of this letter is to inform interested and affected public of the proposal and to solicit comments pursuant to the National Environmental Policy Act of 1969. Enclosed is a Scoping Information Package describing the project proposal.

Scoping is a public involvement process used to determine the scope of issues to be addressed and identify issues related to a proposed action. Analysis of the proposal is ongoing and will be documented in an environmental assessment with an estimated completion in the summer of 2018. Comments received in response to this solicitation will be used to identify potential environmental issues related to the proposed action and to identify alternatives to the proposed action that meet the purpose of and need for the project.

Please help us identify important issues and concerns regarding the proposed action by providing your written comments by **January 22, 2018**. Written comments should be submitted electronically to sra-nepa-comments@usbr.gov, or mailed or hand-delivered to:

Ms. Amy Goodrich
Natural Resources Specialist
Bureau of Reclamation Snake River Area Office
230 Collins Road
Boise, Idaho 83702

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

If you have additional questions about this proposal or its analysis, please contact Ms. Amy Goodrich, Natural Resources Specialist, at 208-383-2250.

Sincerely,

Roland K. Springer
Area Manager

Enclosure

Scoping Information Package

Proposal to Perform Removal, Replacement, and Reinforcement of Bulkhead Gates and Sluice Gates in the Minidoka Unit 7 Bulkhead Structure at Minidoka Dam, Minidoka County, Idaho

This information package summarizes the proposal from the Bureau of Reclamation (Reclamation) to perform construction activities necessary for the maintenance and rehabilitation of the Minidoka Unit 7 Draft Tube Bulkhead structure. This project would require short-term dewatering in the tailrace to perform removal and replacement of components, as well as placement of new concrete reinforcement structures. This project would address the need for replacement and repair of the original bulkhead gate steel slots and adjacent concrete that have deteriorated over 75 years in service. These components require replacement or repair before further deterioration compromises the integrity of the powerplant structure.

Federal actions must be analyzed in accordance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations to determine potential environmental consequences. Reclamation is asking for comment to better identify issues and concerns associated with this proposal, further detailed below.

Background

The original Minidoka Powerplant (Units 1 through 5) had a total capacity of 7.5 megawatts. Minidoka Powerplant's Unit 6 was installed in 1927 and Unit 7 was installed in 1942 to meet the increased power production needs of the Minidoka Project as well as to keep pace with the growing market for power in nearby towns. Due to age, Units 1 through 5 were decommissioned in 1993–1994, but Units 6 and 7, as well as newer Units 8 and 9 which were added in 1997, remain in service with a combined generating capacity of 28.5 megawatts.

Existing Condition and Need for Action

Portions of the Unit 7 downstream draft tube bulkhead gate concrete and steel, original to the structure, have deteriorated over time and require repairs. The bulkhead gate steel slots and adjacent concrete which supports the guides for the bulkhead gates and operators has deteriorated to a point where the bulkhead gate may not be adequately stabilized in the structure. Additionally, leaks caused by this degradation currently severely hamper the ability to dewater and perform adequate routine maintenance on the lower portion of Unit 7. The deteriorated concrete and steel needs to be repaired or replaced before further degradation compromises the integrity of the powerplant structure. Failure of the sluice gates could result in the uncontrolled dewatering of Lake Walcott.

Decision to be made – Through the process of an environmental assessment, Reclamation will determine whether the proposed project would significantly affect the quality of the human environment and thereby require the preparation of an Environmental Impact Statement, and if

not, whether the project qualifies for a Finding of No Significant Impact. Reclamation will then determine whether to do one of the following:

- Approve the proposed project
- Deny the proposed project
- Accept the proposed project with minor changes

Proposed Action

The Proposed Action Alternative involves the removal and replacement of components of three bulkhead gates in the Minidoka Unit 7 Draft Tube Bulkhead structure and the addition of concrete reinforcement plugs downstream of four existing sluice gates. This would include the removal, offsite disposal, and replacement of three existing roller-style outlet gates, gate channels, actuators, seals, sill plates, operators, and other structural steel (e.g., railings) in the Unit 7 Draft Tube Bulkhead structure.

Installation of replacement materials would require hydrodemolition and offsite disposal of cracked, weak, or otherwise deteriorating concrete from the existing pier structures surrounding the gate channels, and placement of new concrete and rebar to rebuild the piers. Hydrodemolition (also known as hydroblasting, hydromilling, waterblasting, and waterjetting) is a concrete removal technique which utilizes high-pressure water to remove concrete, asphalt and grout material; the water used in this process would be imported and fully recaptured by the contract awardee for appropriate offsite disposal according to industry standards. Four reinforced concrete sluice plugs (each plug measuring 9 feet wide, 12 feet high, and 16 feet deep) would be placed immediately downstream of the existing sluice gates, using the sluice gates as the upstream form, and rebar would be tied into the existing concrete structure to ensure structural integrity is maintained under loads of up to 50 feet of hydraulic head from the upstream reservoir. Pressure-grouting (a process of inducing grout under pressure into cracks or spaces to ensure full penetration of the grout material) of the top six inches of these plugs would be performed at placement. Access to the outlet gates and sluice gates would be achieved via a crane, to be staged on an existing pad downstream of the Unit 7 Powerhouse. Removal of materials that may contain hazardous substances (e.g., lead-based paint, powder coatings, etc., on railings) and the finish coating of installed replacement components would be performed with appropriate containment measures in place to minimize mobilization and prevent any contamination. Specific coatings and coating procedures to be utilized will be proposed by the contract awardee, and subject to approval by Reclamation.

This work would require the dewatering of an area of up to 2,800 square feet (approximately 40 feet by 70 feet) in the tailrace immediately downstream from the Unit 7 Draft Tube Bulkhead structure, up to a depth of approximately one foot below the level of the existing sluice gate floor, through construction of a cofferdam system. Specifications of the cofferdam system will be proposed by the contract awardee and subject to approval by Reclamation. Full depth dewatering below the original Minidoka powerhouse would not be permitted. The duration of the cofferdam placement and period of dewatering would be between approximately 45 days to three

months, and would not exceed four months. All work will take place between October 1, 2018, and March 31, 2019.

Preliminary Alternative Development

The environmental assessment would include consideration of the Proposed Action Alternative and the No Action Alternative. The No Action Alternative would include Reclamation's continued operation of the Minidoka Unit 7 Powerhouse in its present condition. The proposed maintenance and rehabilitation construction activities would not occur, and the Minidoka Unit 7 Draft Tube Bulkhead structure would continue operation with the original, deteriorated steel and cement components. Additional alternatives would be developed commensurate with the issues identified throughout the NEPA process.

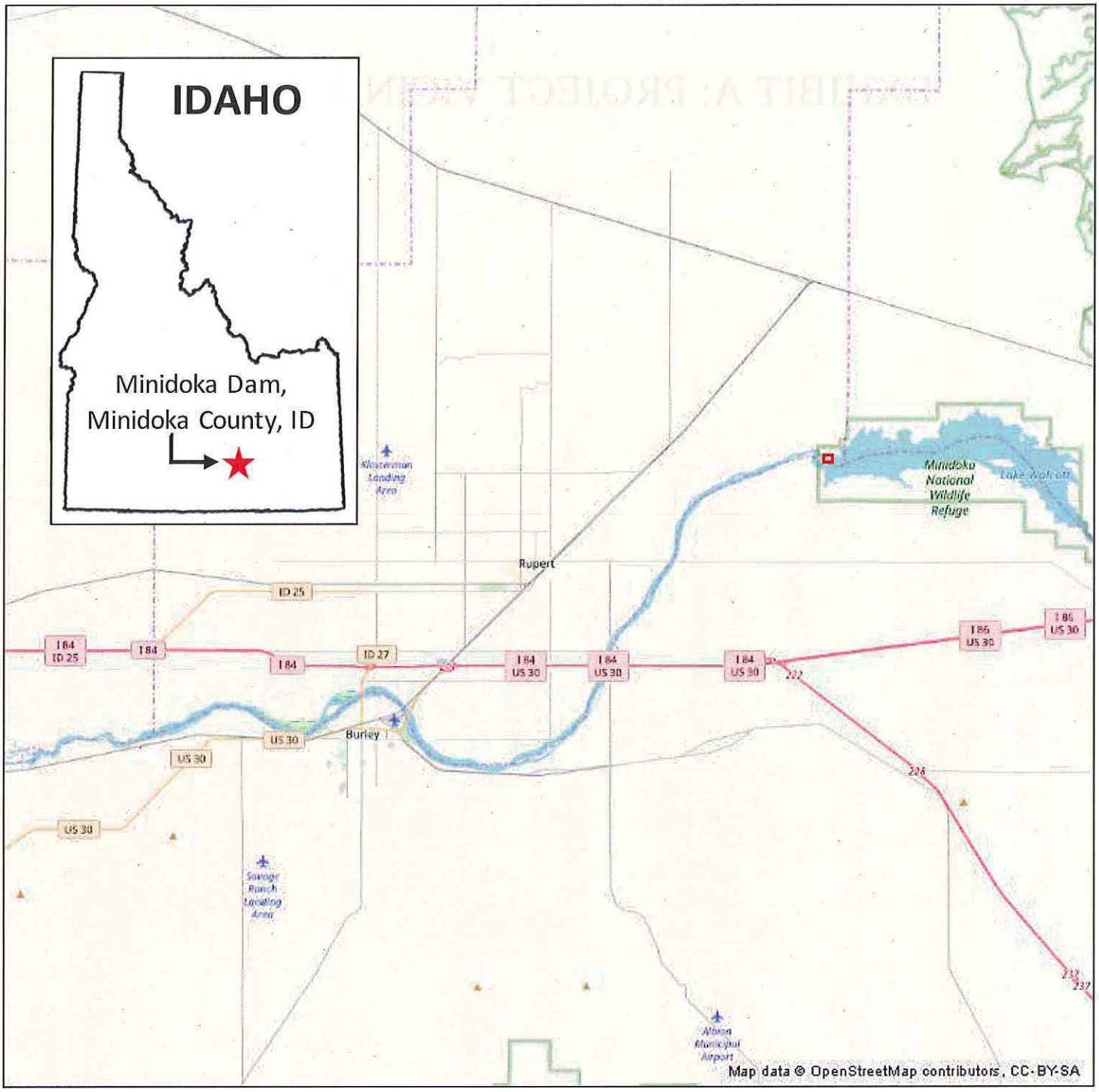
Exhibits

A. Project vicinity map
B. Minidoka Unit 7 project site map

EXHIBIT A: PROJECT VICINITY MAP

Project Vicinity Map

RECLAMATION
Managing Water in the West



----- Project Area

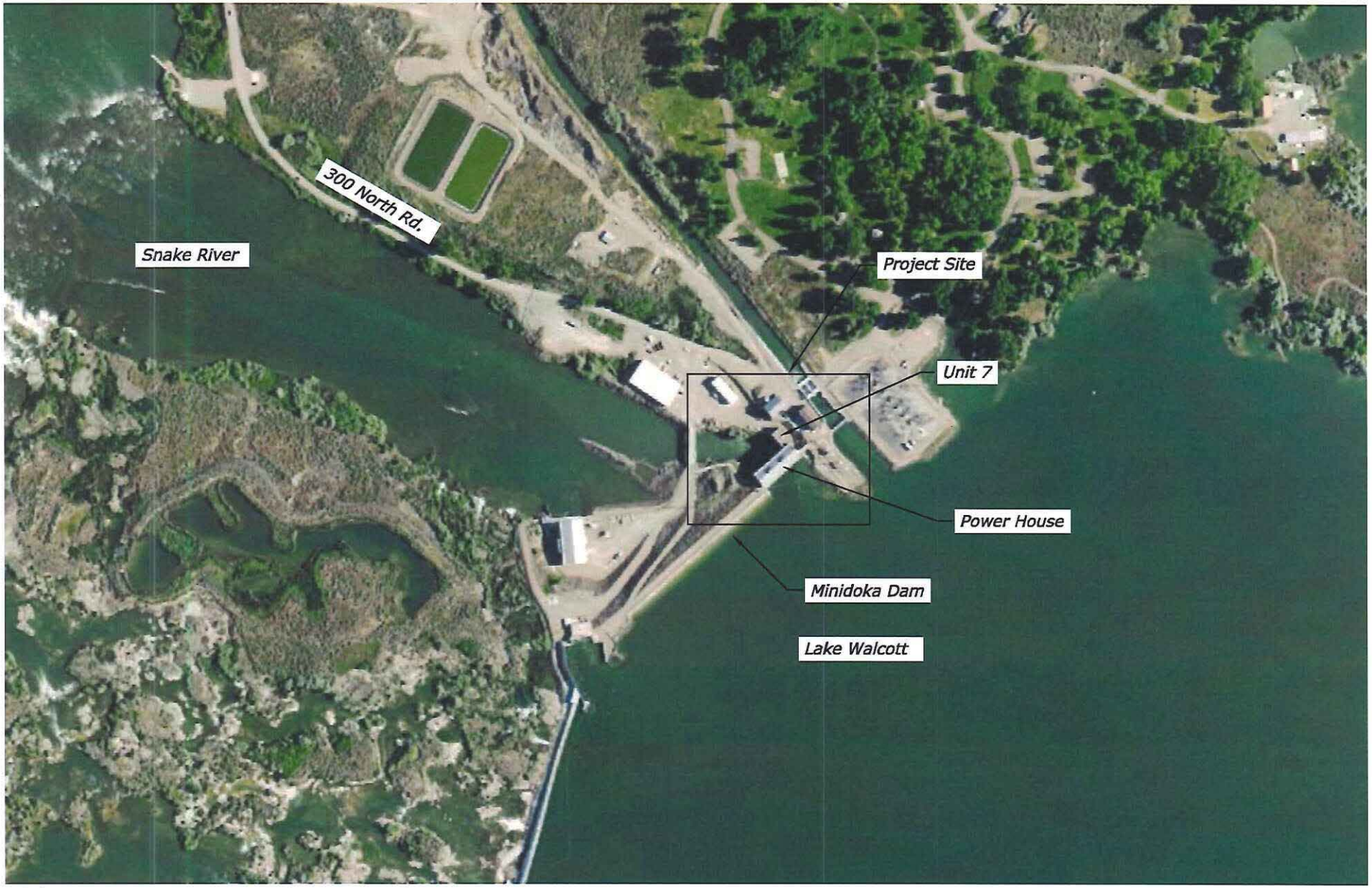
Miles
0 2 4 6 8

N

This map is provided as-is and may contain representations of property boundaries. It is intended for general reference only. None of the parties involved in preparing this map or data contained herein warrant or represent information to be complete and accurate, and cannot be held responsible for errors or omissions.

Map created by: Amy Goodrich
Date: 12/11/2017

EXHIBIT B: MINIDOKA UNIT 7
PROJECT SITE MAP



LOCATION MAP

300 0 300 600 900

SCALE OF FEET

Appendix D – Tribal Coordination and Consultation: Reclamation's Tribal scoping letters (enclosed information package identical to that included in Appendix C)

7-1596B (9-08)
Bureau of Reclamation

OFFICIAL FILE COPY		
DATE	SURNAME	CODE
12/15/17		1210
12/15		1200
12/15		1000
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Classification		
Project		
Control No.		
Folder I.D.		

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:
SRA-1214
2.1.4.13

DEC 15 2017

VIA FEDERAL EXPRESS

Honorable Theodore Howard Fed Ex Tracking # 7710 1431 9130
Tribal Chairman
Shoshone-Paiute Tribes
1623 Hospital Loop
Owyhee, NV 89832

Subject: Request for Comments Regarding the Proposed Removal, Replacement, and Reinforcement of Components of the Minidoka Unit 7 Bulkhead Structure at Minidoka Dam, Minidoka County, Idaho

Dear Chairman Howard:

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Ms. Amy Goodrich
Natural Resources Specialist
Bureau of Reclamation Snake River Area Office
230 Collins Road
Boise, Idaho 83702

If you have additional questions about this proposal or its analysis, please contact Ms. Amy Goodrich, Natural Resources Specialist, at 208-383-2250.

Sincerely,

ROLAND K SPRINGER

Roland K. Springer
Area Manager

Enclosure

cc: Lynneil A. Brady Fed Ex Tracking # 7710 1474 3857
Acting Cultural Resources Director
Shoshone-Paiute Tribes
1623 Hospital Loop
Owyhee, NV 89832

Environmental Director Fed Ex Tracking # 7710 1487 7104
Tribal Headquarters
Shoshone-Paiute Tribes
1623 Hospital Loop
Owyhee, NV 89832
(w/encl to each)

WBR:AGoodrich:KHennequin:12/15/2017:208-383-2250:SRA-1214
P:\NEPA\NEPA Projects\EA\Minidoka Unit 7\Scoping\Final Docs\TRIBAL LETTERS\ShoPai_Minidoka_Unit_7_Tribal Scoping Letter_20171207.docx

Identical Letter Sent To:

Honorable Nathan Small Fed Ex Tracking #7710 1409 5395
Chairman, Fort Hall Business Council
Shoshone-Bannock Tribes
85 W. Agency Rd., Building #82
Fort Hall, ID 83203

cc: Mr. Cleve Davis Fed Ex #7710 1476 4763
Environmental Program Manager
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306

Continued on next page.

Mr. Chad Colter Fed Ex Tracking #7710 1483 4330
Fish and Wildlife Director
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306
(w/encl to each)

Scoping Information Package

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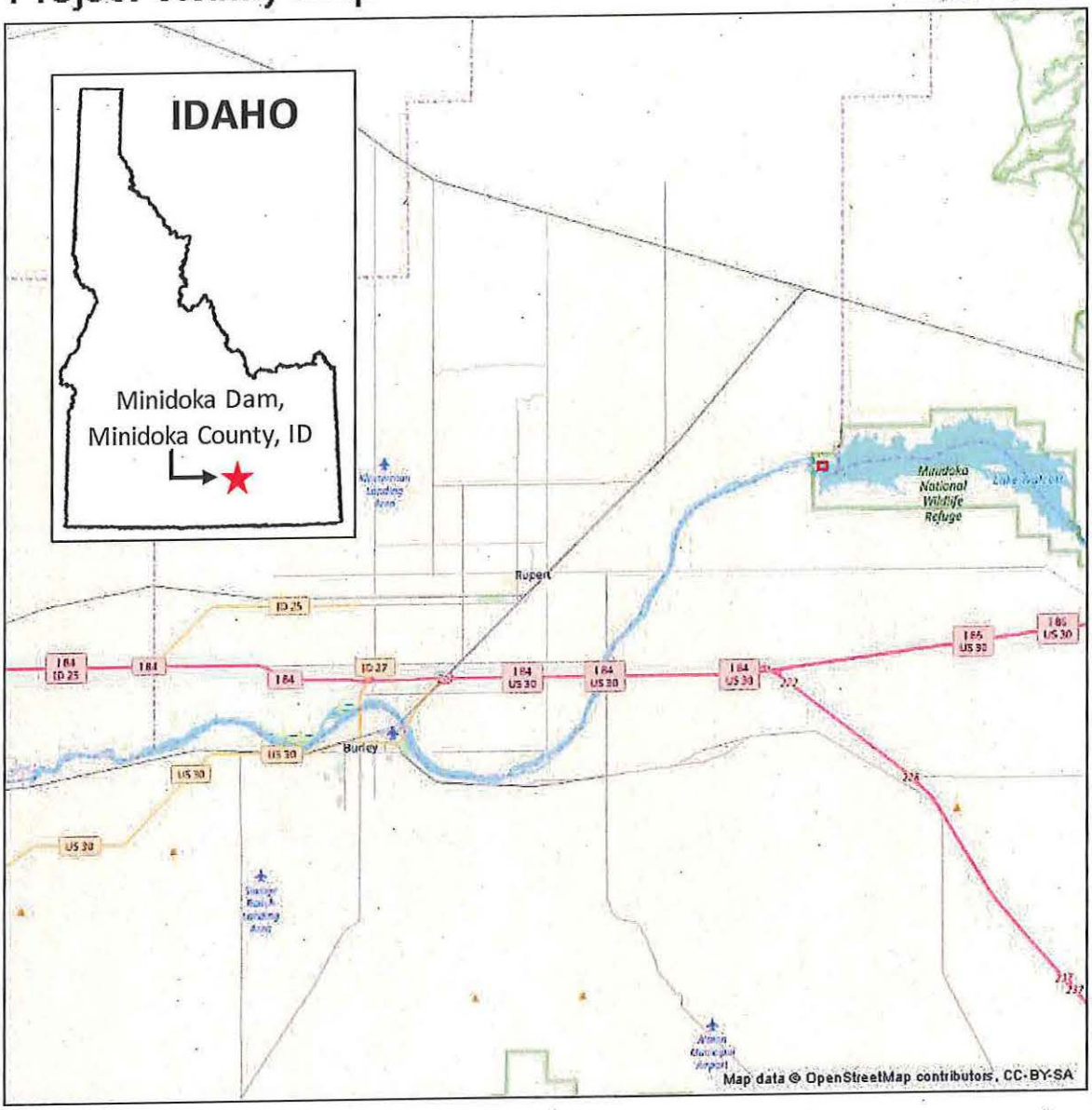
Managing Water in the West



----- Project Area

Miles
0 2 4 6 8

N

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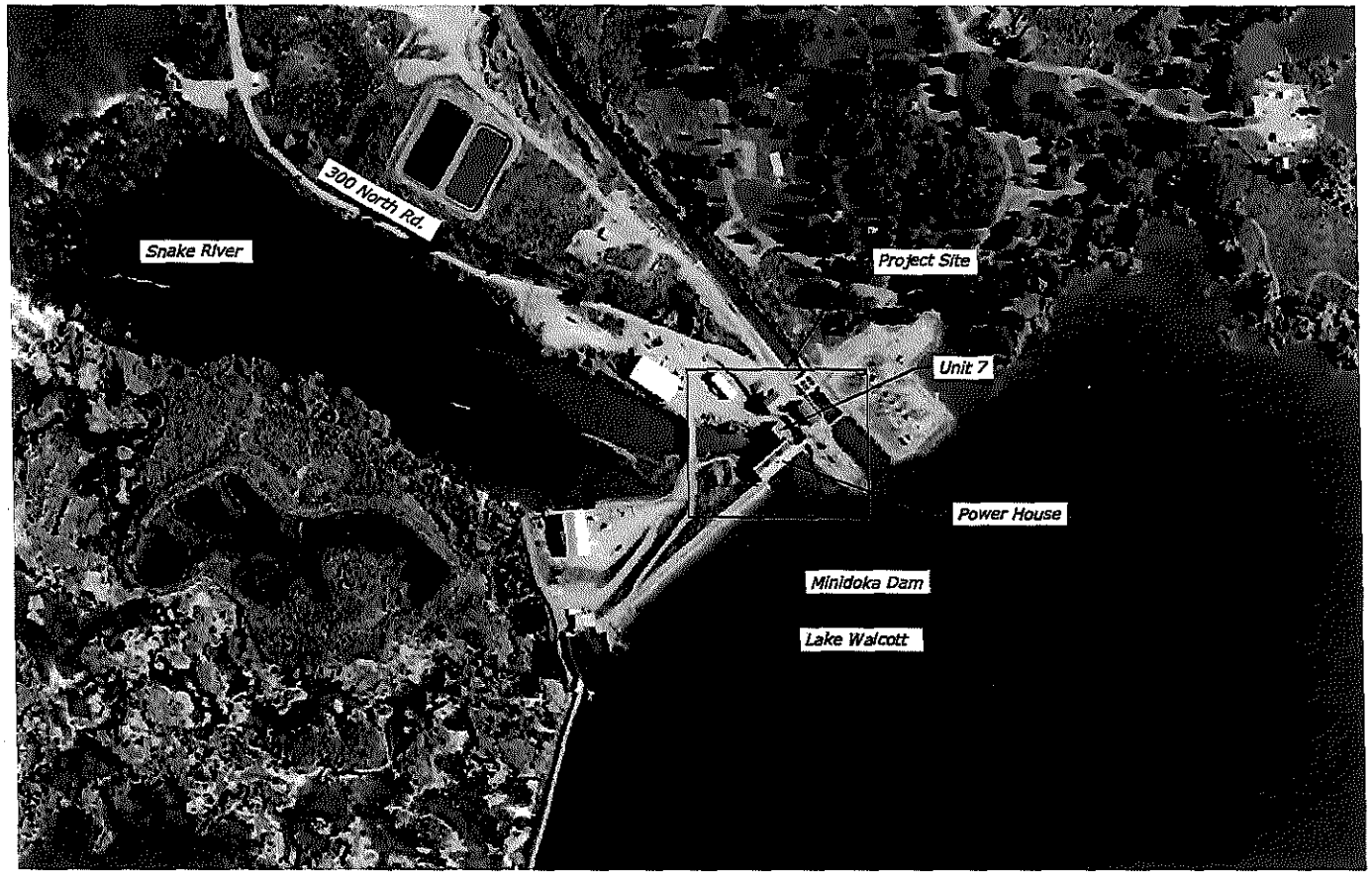
Map created by: Amy Goodrich
Date: 12/11/2017

EXHIBIT B: MINIDOKA UNIT 7
PROJECT SITE MAP



LOCATION MAP

300 0 300 600 900

SCALE OF FEET

December 26,2017

Dear Customer:

Proof-of-delivery letters are being provided for the following shipments:

771014095395	FORT HALL,ID
771014319130	OWYHEE,NV
771014743857	OWYHEE,NV
771014764763	FORT HALL,ID
771014834330	FORT HALL,ID
771014877104	OWYHEE,NV

You may save or print this Batch Signature Proof of Delivery file for your records.

Thank you for choosing FedEx.

FedEx
1.800.GoFedEx 1.800.463.3339

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014095395**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Shipping/Receiving
Signed for by:	C.DIXEY	**Delivery location:**	85 W AGENCY ROAD FORT HALL, ID 83203
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 19, 2017 14:11
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014095395	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Honorable Nathan Small
Shoshone-Bannock Tribes
85 W. Agency Road
Building #82
FORT HALL, ID 83203 US

Reference

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Goodrich - Minidoka Unit 7

Thank you for choosing FedEx.

FedEx

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014319130**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Mailroom
Signed for by:	M.HENRY	**Delivery location:**	TERRY MILLS OWYHEE, NV 89832
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 21, 2017 16:53
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014319130	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Honorable Ted Howard
Shoshone-Paiute Tribes
1623 HOSPITAL LOOP
OWYHEE, NV 89832 US

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Reference Minidoka Unit 7/Ten Mile Feede

Thank you for choosing FedEx.

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014743857**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Mailroom
Signed for by:	M.HENRY	**Delivery location:**	TERRY MILLS OWYHEE, NV 89832
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 21, 2017 16:53
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014743857	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Lynneil A. Brady
Shoshone-Paiute Tribes
1623 HOSPITAL LOOP
OWYHEE, NV 89832 US

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Reference Minidoka Unit 7/Ten Mile Feede

Thank you for choosing FedEx.

FedEx

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014764763**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Shipping/Receiving
Signed for by:	C.DIXEY	**Delivery location:**	85 W AGENCY ROAD FORT HALL, ID 83203
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 19, 2017 14:11
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014764763	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Mr. Cleve Davis
Shoshone-Bannock Tribes
85 W. Agency Rd.
Building #82
FORT HALL, ID 83203 US

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Reference Goodrich - Minidoka Unit 7

Thank you for choosing FedEx.

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014834330**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Shipping/Receiving
Signed for by:	C.DIXEY	**Delivery location:**	85 W AGENCY ROAD FORT HALL, ID 83203
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 19, 2017 14:11
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014834330	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Mr. Chad Colter
Shoshone-Bannock Tribes
85 W. Agency Rd.
Building #82
FORT HALL, ID 83203 US

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Reference Goodrich - Minidoka Unit 7

Thank you for choosing FedEx.

December 26,2017

Dear Customer:

The following is the proof-of-delivery for tracking number **771014877104**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Mailroom
Signed for by:	M.HENRY	**Delivery location:**	TERRY MILLS OWYHEE, NV 89832
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 21, 2017 16:53
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	771014877104	**Ship date:**	Dec 18, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Environmental Director
Shoshone-Paiute Tribes
1623 HOSPITAL LOOP
OWYHEE, NV 89832 US

Shipper:
Katy Hennequin
230 Collins Road
Boise, ID 83702 US

Reference Goodrich - Minidoka Unit 7

Thank you for choosing FedEx.

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:

DEC 15 2017

SRA-1214
2.1.4.13

VIA FEDERAL EXPRESS

Honorable Nathan Small
Chairman, Fort Hall Business Council
Shoshone-Bannock Tribes
85 W. Agency Rd., Building #82
Fort Hall, ID 83203

Subject: Request for Comments Regarding the Proposed Removal, Replacement, and Reinforcement of Components of the Minidoka Unit 7 Bulkhead Structure at Minidoka Dam, Minidoka County, Idaho

Dear Chairman Small:

The Bureau of Reclamation is proposing to perform construction activities to remove, replace, and reinforce components of the Minidoka Unit 7 bulkhead structure at Minidoka Dam, Minidoka County, Idaho. The purpose of this letter is to inform interested and affected Tribal public of the proposal and to solicit comments pursuant to the National Environmental Policy Act of 1969. Enclosed is a Scoping Information Package describing the project proposal.

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Please help us identify important issues and concerns regarding the proposed action by providing your written comments by **January 22, 2018**. Written comments should be submitted electronically to sra-nepa-comments@usbr.gov, or mailed or hand-delivered to:

Ms. Amy Goodrich
Natural Resources Specialist
Bureau of Reclamation Snake River Area Office
230 Collins Road
Boise, Idaho 83702

If you have additional questions about this proposal or its analysis, please contact Ms. Amy Goodrich, Natural Resources Specialist, at 208-383-2250.

Sincerely,

Roland K. Springer
Area Manager

Enclosure

cc: Mr. Cleve Davis
Environmental Program Manager
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306

Mr. Chad Colter
Fish and Wildlife Director
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306
(w/encl to each)

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

DEC 15 2017

IN REPLY REFER TO:

SRA-1214
2.1.4.13

VIA FEDERAL EXPRESS

Honorable Theodore Howard
Tribal Chairman
Shoshone-Paiute Tribes
1623 Hospital Loop
Owyhee, NV 89832

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Ms. Amy Goodrich
Natural Resources Specialist
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If you have additional questions about this proposal or its analysis, please contact Ms. Amy Goodrich, Natural Resources Specialist, at 208-383-2250.

Sincerely,

Roland K. Springer
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Enclosure

cc: Lynneil A. Brady
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