



— BUREAU OF —
RECLAMATION

Boise River Basin Feasibility Study

Specialist Report: Cultural Resources

Boise Project, Idaho

Interior Region 9: Columbia Pacific Northwest

Mission Statements

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

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.

Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
APE	area of potential effect
BNF	Boise National Forest
BP	before present
CCC	Civilian Conservation Corps
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
GIS	geographic information system
HD	Highway District
kVA	kilovolt-ampere
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
Reclamation	Bureau of Reclamation
SHPO	State Historic Preservation Office
USFS	U.S. Forest Service

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1 Introduction

The Boise River Basin Feasibility Study is a feasibility study to evaluate increasing water storage opportunities within the Boise River basin by expanding Anderson Ranch Reservoir. The project is located at Anderson Ranch dam and reservoir, the farthest upstream of the three reservoirs within the Boise River system and located 28 miles northeast of the city of Mountain Home in Elmore County, Idaho. Anderson Ranch Dam is a zoned earth fill embankment structure that provides irrigation water, flood control, power generation, and recreation benefits. The reservoir also provides a permanent dead storage pool for silt control and the preservation and propagation of fish and wildlife. Anderson Ranch Dam is operated by the Bureau of Reclamation (Reclamation). Reclamation, in partnership with the Idaho Water Resource Board (IWRB), proposes to raise Anderson Ranch Dam. New water storage would provide the flexibility to capture additional water when available, for later delivery when and where it is needed to meet existing and future demands. The alternatives analyzed in this document include the No-Action Alternative (Alternative A), a 6-foot raise of Anderson Ranch Dam (Alternative B), and a 3-foot raise of Anderson Ranch Dam (Alternative C).

Alternative A provides a basis for comparison with the two action alternatives, Alternative B and Alternative C. Under Alternative A, current baseline conditions would continue, without increasing Anderson Ranch Dam height or constructing associated reservoir rim projects, access roads, or facilities. The expected project duration of Alternative B is approximately 51 months and Alternative C is 44 months. Reclamation would continue existing operations of Anderson Ranch Dam. Alternative B proposes to raise the dam by 6 feet from the present elevation of 4196 feet to 4202 feet to capture and store approximately 29,000 additional acre-feet of water. Alternative B would inundate an estimated 146 acres of additional land around the reservoir above the current full pool elevation of 4196 feet. Alternative C proposes to raise the dam by 3 feet to 4199 feet, allowing for the ability to capture and store approximately 14,400 additional acre-feet of water. Alternative C would inundate an estimated 73 acres of additional land around the reservoir above the current full pool elevation of 4196 feet.

Each of the two action alternatives, Alternative B and Alternative C, includes two separate, but similar, structural construction methods for the dam raise, downstream embankment raise, or mechanically stabilized earth wall raise. Otherwise, the only difference is the dam raise elevations of 6 feet for Alternative B and 3 feet for Alternative C. Project areas and construction durations for each method are nearly identical, except for a 200-foot difference in approach road length at the right abutment and an approximate 1-month difference in construction duration. The longer road length is within the dam footprint on previously disturbed ground. Because these differences are negligible, they are not differentiated within the analysis of each alternative. Alternative analysis assumes the longer road length and

construction duration, however, a final construction method will be chosen during later phases of engineering evaluation.

Chapter 1 and Chapter 2 of the Boise River Basin Feasibility Study Environmental Impact Statement (EIS) provide a detailed description of the proposed action, project's purpose and need, project area, and alternatives including design features applicable to the action alternatives. This specialist report supports the analysis of expected impacts to Cultural Resources as described in the EIS.

1.1 Regulatory Framework

Cultural resources may include archaeological traces, such as Native American occupation sites and artifacts, historic-era buildings and structures, places used for traditional Native American observances, or places with special cultural significance. The criteria for determining the significance of cultural resources in the project area are based on National Environmental Policy Act (NEPA) policies, Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, its implementing regulations in 36 Code of Federal Regulations (CFR) 800, and significance criteria for cultural resources listed in 36 CFR 60.4.

1.2 NEPA Guidelines

In accordance with NEPA, when assessing the impacts of a project, an agency must consider the following.

- Unique characteristics of the geographic area, such as proximity to historic or cultural resources (40 CFR 1508).
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) (40 CFR 1508.27[b][8]).

1.3 Section 106 of the National Historic Preservation Act of 1966, as amended

Under Section 106 (Title 16, Section 470 and subsequent sections of U.S. Code [16 USC 470 et seq.]) and its implementing regulations (36 CFR 800 et seq.), scoping, assessment, and consultation must occur to determine impacts on properties included in or eligible for the NRHP. Section 106 consultation is conducted during EIS preparation to determine whether historic resources will be adversely affected, and if so, whether measures can be implemented to reduce adverse effects to a less-than-significant level. Section 106 does not deal with impacts on all types of cultural resources, or all cultural aspects of the environment; it deals only with impacts on properties included in or eligible for the NRHP.

Section 106 requires Federal agencies to consider the effects of their actions—including those they fund or permit—on properties that may be eligible for listing or are listed in the NRHP. To determine an undertaking's effects on NRHP-eligible properties, archaeological,

historical, and architectural properties must first be inventoried and their eligibility for listing in the NRHP must be evaluated if it has not already been. Section 106 involves four steps.

1. Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.
2. Identify historic properties by determining the scope of efforts, identifying cultural resources, and evaluating their eligibility for inclusion in the NRHP.
3. Assess adverse effect by applying the criteria of adverse effect on historic properties (resources that are eligible for inclusion in the NRHP).
4. Resolve adverse effects by consulting with the State Historic Preservation Officer and other consulting agencies such as Tribes, including the Advisory Council on Historic Preservation if necessary, to develop an agreement that addresses the treatment of historic properties.

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2 Affected Environment

For the purpose of this Cultural Resources Specialist Report, the affected environment is focused on that which occurs in and around Anderson Ranch Reservoir and the South Fork Boise River. This report describes cultural resources at Anderson Ranch Reservoir and the South Fork Boise River between the dam and the pool of Arrowrock Reservoir.

The EIS describes the primary and extended study areas for cultural resources potentially affected by the evaluated alternatives under the Boise River Basin Feasibility Study. The alternatives are evaluated in this section.

2.1 Alternative A – No-Action Alternative

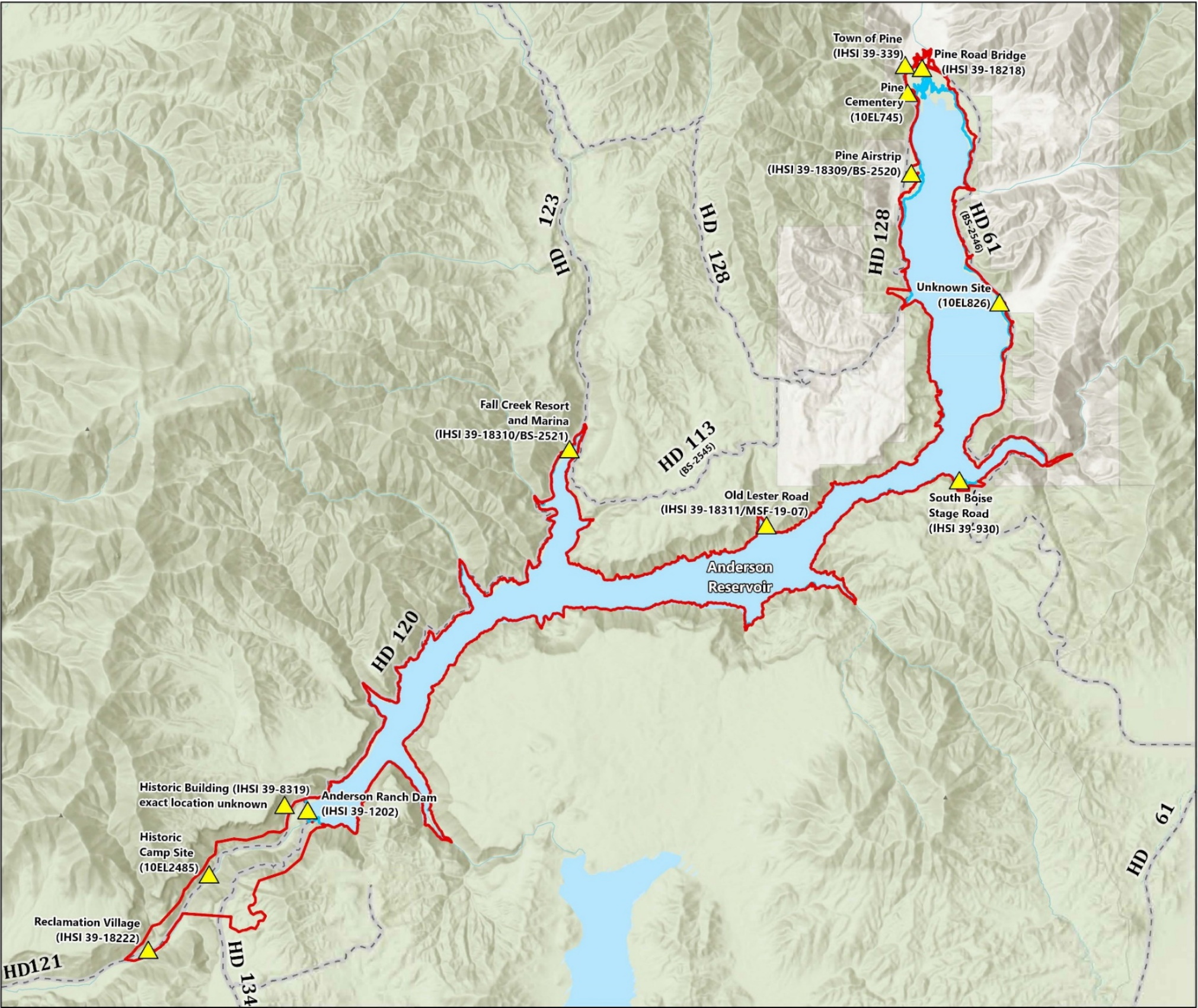
Under Alternative A, the No-Action Alternative, no actions would be taken to modify the Anderson Ranch Dam to increase storage capacity. Facilities and opportunities would remain consistent with current access, opportunities, and experience. Access to facilities and opportunities would not be disrupted and public access would remain consistent with current availability. As the Treasure Valley population continues to grow, increasing demands on Anderson Ranch Reservoir and South Fork Boise River recreational facilities would also continue to grow. Opportunity and experience are likely to continue to degrade as the developed facilities and undeveloped areas see an increase in demand.

2.2 Alternative B – Anderson Ranch Dam 6-foot Raise

Cultural resources were investigated within the primary study area of Alternative B, which is equivalent to the area of potential effects defined by the Section 106 process (Figure 1). The project area boundaries include: the land areas around the reservoir perimeter above the current high water mark (4196 feet) plus 6 feet to the new full pool line (4202 feet) and additionally to the proposed new full pool water elevation plus four feet (4206 feet). The affected areas would be subject to new erosion and areas not too steep for human use or occupation, the dam and spillway and related features, culvert and pool improvements at Fall Creek and Deer Creek road crossings, proposed borrow areas, proposed contractor use areas, and proposed road realignment portion of Highway District (HD) 131.

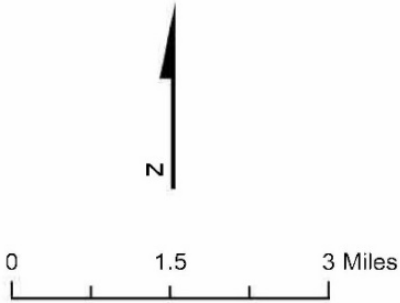
The Section 106 process is required only for the preferred alternative, Alternative B. Cultural resource investigations consisted of a phased approach that included Native American consultation, pre-field research, field surveys, and resource documentation. All aspects of the cultural resource study were conducted in accordance with the Secretary of the Interior's Guidelines for Identification of Cultural Resources (48 CFR 44720-44723).

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Legend

- Resources in Analysis
- Area of Potential Effect
- Current Full Pool - 4196'
- Roads



Notes:

1. This map is provided as-is and may contain representations of property boundaries. It is intended for general references 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.

Figure 1. Alternative B & C Study Area
Boise Project - Arrowrock Division
Boise River Basin Feasibility Study

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As outlined in more detail in Section 3.23 Tribal Interests of the EIS, Reclamation identified two Federally recognized tribes to consult with for this project: the Shoshone-Bannock Tribes of the Fort Hall Reservation and the Shoshone-Paiute Tribes of the Duck Valley Reservation. Several forms of outreach to both tribes resulted in no specific cultural resources being identified, although concerns were raised by the Shoshone-Bannock Tribes regarding certain use of the area for fishing pre-reservoir and potential burial sites on Federal lands.

Pre-field research included two cultural resource record searches from the State Historic Preservation Office (SHPO), in-house documents and maps reviews, and archival research. Much of the information found regarding Anderson Ranch Dam was gleaned from the Boise Project histories on file at the Snake River Area Office. In addition, the local U.S. Forest Service (USFS) office provided information from its files about permit holdings adjacent to the reservoir shoreline.

Pedestrian surveys were conducted by Reclamation in seven instances between July 28, 2018, and April 7, 2020. Around the perimeter of the reservoir, areas to be newly inundated by a 6-foot raise in water level were the focus of intensive survey, as well as possible future recreation areas. Borrow pits, contractor use areas, and the dam and its features were also investigated. The proposed detour route for the haul road and the two proposed fish passage improvements were the last parts of Alternative B to be intensively surveyed.

2.3 Environmental Setting

Anderson Ranch Dam is located on the South Fork Boise River at 4196 feet elevation in the hydrologic subbasin of the same name. The South Fork Boise River subbasin is located in southwestern Idaho, east of Boise and predominantly in Elmore and Camas counties. The watershed includes the South Fork Boise River upstream of the slack water of Arrowrock Reservoir, Anderson Ranch Reservoir, and all South Fork Boise River tributaries upstream to the headwaters. The subbasin area is primarily federally owned and administered. Prairie, Pine, and Featherville are the only recognized communities in the watershed that have year-round residents; second, summer, or recreational homes are found in numerous subdivided areas throughout the watershed. Access is provided by many miles of USFS-maintained roads and by county-owned or county-maintained roads (Idaho Department of Environmental Quality, 2019).

2.3.1 Vegetation

Vegetation at lower elevations is typically grasslands, shrublands, ponderosa pine, and Douglas fir on south and west aspects, and Douglas fir forests on north and east aspects. Mid and upper elevations are dominated by shrubs and forest communities of Douglas fir and subalpine fir, with pockets of seral lodgepole pine and aspen. Aspen can also occur as a climax community. Most of the area is comprised of rock, water, or shrubland and grassland vegetation groups, including mountain big sage, bitterbrush, montane shrub, and perennial grass slopes. The main forested vegetation groups in the area are warm dry Douglas fir/moist

ponderosa pine, cool dry Douglas fir, cool moist Douglas fir, and dry ponderosa pine/xeric Douglas fir. A large amount of forested vegetation has recently been burned by lethal wildfires. Aspen is an important component in all of the forested groups (USFS, 2003), as aspen enhance biodiversity, facilitate rapid (re)colonization in natural and damaged settings (e.g., abandoned mines), and provide adaptability in changing environments (Rogers et. al, 2019). Invasive tamarisk has created a large barrier to the water around several areas of the reservoir, sometimes growing to a height of 7 feet. Cheat grass, another invasive, has taken residence between the tamarisk, sagebrush, and mountain shrub communities.

2.3.2 Fisheries

Anadromous fish species no longer exist within area streams due to downstream dams that block their migration routes to and from the ocean. Native redband trout also occur in several accessible streams, but their abundance is not well known. The South Fork Boise River is managed as a “blue ribbon” rainbow trout stream, and Anderson Ranch Reservoir is managed as a kokanee salmon fishery. Several non-native species have been introduced to area streams and reservoirs for sport fishing. Native fish populations are at risk due to the presence of non-native species and inaccessibility to necessary habitat (USFS, 2003).

Bull trout are known to mostly occur within the South Fork Boise River, which they use as a migration corridor between Anderson Ranch Reservoir and headwater streams. Bull trout have been closely monitored by Reclamation and have provided information on the habitat that has been created by Anderson Ranch Dam. Bull trout have been listed as threatened since June 1998 (63 *Federal Register* 31647) by the U.S. Fish and Wildlife Service in the Columbia and Klamath river basins. Anderson Ranch Dam has created an ideal habitat for bull trout downstream on the South Fork Boise River and are available year-round but are rarely located near the dam (Reclamation, 2019a).

2.3.3 Geology

Anderson Ranch Dam is located near the southwestern edge of the Idaho Batholith, which is composed of a series of closely related, coarse-grained intrusions. Major normal faulting in the region includes faults in and adjacent to the batholith, faults bounding the northeast and southwest margin on the adjacent Snake River plain, and faults forming Camas prairie basin east of the dam. These faults show a low to moderate seismic activity level (Reclamation, 2019b). The dam is in a narrow, steep-sided valley cut through several hundred feet of igneous extrusive and intrusive rock. In the dam foundation, the rock was found to be intensely fractured and cut by numerous shears and fractures of varying widths. Several dikes were also found normal to the canyon axis. The dikes present a reduction for fractures and shears reducing the foundation permeability and making a tight foundation. Materials within the canyon include talus, colluvium, alluvium, residual soil, and intact rock. These materials form the foundation of the dam and have performed well with respect to deformation and seepage.

2.4 Cultural Setting

2.4.1 Pre-Contact

Evidence of Native American occupation in southwestern Idaho dates as early as 14,500 years B.P. (before present). Archaeologists have defined three prehistoric cultural periods in southwest Idaho. These are the Paleo-Indian period (14,500 to 7,000 BP), the Archaic period (7,000 to 300 B.P.), and the Protohistoric period (300 B.P. to European contact).

Archaeological investigations in the area indicate a prolonged seasonal use through the Early, Middle, and Late Archaic periods (7000-250 B.P.) (Plew and Osgood 2017).

The traditional subsistence system was based on the meticulous exploitation of numerous plants, animals, and raw material resources obtained by traveling from one place to another in a seasonal round. Depending on local conditions, roots or seed plants provided a large portion of the food supply, although fish and small game were very important. Typically, multiple family groups spent the winter in small villages along the lower and middle reaches of the Payette and Boise rivers. By early spring, stored food reserves were exhausted, and individual families spread across the landscape to forage. Through the late spring and summer, they traveled throughout riverine and upland areas to harvest a wide range of seasonally available food, medicinal plants, and raw materials to manufacture tools and other essentials. In the fall they again converged on the rivers to exploit the fall salmon run. However, this traditional subsistence system was already changing when the first Europeans arrived.

2.4.2 Post-Contact

Shoshone and Bannock peoples and Northern Paiute groups occupied the Boise River and the Payette River basins at the time of European movement into the area that is now Idaho. Early explorers reported the Boise River and vicinity were an important seasonal meeting and trading location for nonresident groups from the Columbia River, northern Idaho, the Oregon deserts, and Wyoming. The subsistence strategy observed by the early 1800s included exploitation of plant, animal, and raw material resources obtained by traveling seasonally. Multiple family groups spent winters in small villages along the lower and middle areas of the Payette and Boise rivers.

The first long-term, non-Indian occupants in southwest Idaho were fur traders. In 1813, a trading post was established near the mouth of the Boise River, and by 1818 the famous "Snake brigade" was operating from the Boise River to the area of the current Yellowstone National Park. Declining fur-bearing animal populations and a reduction in beaver prices essentially ended the fur trade by 1840. However, soon afterward Americans traveling west on the Oregon Trail began to travel through southern Idaho. A spur of the Oregon Trail called Goodale's Cutoff saw use from 1852–1862 just to the south and west of present-day Anderson Ranch Dam. The discovery of commercially profitable amounts of gold in Grimes Creek in 1862 spurred permanent American settlement in southwest Idaho. The boom was

instant but short-lived, because the easily mined placers north of Anderson Ranch Dam at Rocky Bar, for example, were soon exhausted.

However, the population boom stimulated development of agricultural communities that flourished along the rivers in the Boise, Payette, and Weiser valleys. Boise City was established in 1863, and other smaller towns soon sprang up. A second agricultural boom occurred with the completion of the Oregon Short Line Railroad through southern Idaho in 1883; access to regional markets caused an influx of new settlers to farm the fertile bench lands below Boise and Emmett.

The rapid settlement of southwest Idaho after 1863 had catastrophic impacts upon resident Indian populations. Lands in the lower valleys, where the native populations were densest, were settled and closed to the Indians, and miners and grazers penetrated upland areas. Friction rapidly developed between the resident Indians and newly arrived settlers, leading to raids from both sides. Fort Boise was established by the U.S. Army in 1863 to protect settlers from Shoshone raids.

The native culture suffered under the agricultural developments that destroyed their lowland plant food base, denial of access to areas essential in the food collecting seasonal round, and the need to congregate for protection. In 1863, the Federal government began to negotiate treaties to place the Shoshone and Paiute on reservations removed from their Boise and Payette valley homelands. Ultimately, most of the southwest Idaho Indian populations were moved to the Fort Hall or the Duck Valley Indian Reservations.

After 1863 settlers flocked to the Boise Valley to establish farms and businesses. In arid Idaho, irrigation was essential for successful agriculture. By 1880, the seasonal water supply was insufficient to meet existing needs and prohibited expansion. After 1883, out-of-state investors attempted to build ambitious water systems, but most were at best only partially successful. Not until 1905, when the fledgling U.S. Reclamation Service was authorized to build the Payette-Boise Project, could the agricultural potential of the Boise and Payette drainages be fully realized.

2.4.3 Existing Resources

Record searches revealed that nine cultural resources had been documented in or immediately adjacent to the project area before the current work. Site types include a historic camp site, historic government camp, a historic building, a stage road route, a relocated town, a historic relocated cemetery, a recently replaced bridge, and a dam and powerplant and associated features. Additionally, six cultural resources were identified and documented as part of the cultural resource investigations for this project (including the Pine Airstrip, Fall Creek Resort and Marina, Old Lester Road, and three county roads). No archaeological resources have been documented in the project area.

Table 1. Cultural resources documented in the study area

Site Number	Site Type	Site Description	NRHP Evaluation (date SHPO concurred)
10EL745	Pine Cemetery	Historic cemetery	Undetermined
10EL826	Unknown	None given on site form	Undetermined
10EL2485	Historic Camp Site	Root cellar, stone walls, 1940s food cans, lantern parts, box springs, steel drums	Undetermined
39-339	Town of Pine	Buildings, old mine shaft	Undetermined
39-930	South Boise Stage Road	Road	Eligible (1/6/14)
39-1202	Anderson Ranch Dam and Powerplant	Earthen dam, associated features, and powerplant facility	Eligible (1/5/99)
39-8319	Historic Building	Log building	Undetermined
39-18218	Pine Bridge	Bridge (replaced in 2018)	Ineligible (2/17/11)
39-18222	Reclamation Village	Location of the old government camp in use during construction of Anderson Ranch Dam	Ineligible (3/6/15)
BS-2520	Pine Airstrip	Back country dirt airstrip	Ineligible (1/16/20)
BS-2521	Fall Creek Resort and Marina	Complex of buildings for lodging and recreation	Ineligible (1/16/20)
BS-2539	HD 131	Also called NF-131, Prairie Road, Cow Creek Road	Ineligible (5/16/20)
BS-2545	NF 113	Also called Lake Creek Road	Determined ineligible
BS-2546	NF 61	Also called Pine-Featherville Road or Louse Creek Road	Determined ineligible
39-18311 (MSF-19-07)	Old Lester Road	Abandoned roadbed that once connected a group of buildings called Lester near the mouth of Lester Creek to the “main” road above the river valley	Ineligible (1/16/20)

Pine Cemetery (10EL745) – Relocated. The undated site form was completed by Ted E. Cox of USFS in Mountain Home, Idaho. The form includes five cemeteries and graves that were used mostly before 1900 including Granite Creek, Pine, Tellgate, Dog Creek, and Rocky Bar. The size of each is estimated at 1 acre. The current location of the Pine Cemetery is not its original because it had to be moved when Anderson Ranch Reservoir filled. On August 30, 1948, the contract for moving Pine Cemetery was awarded to C.H. Cass of Ontario, Oregon, for the low bid of \$1,744.98. Moving the cemetery and its occupants (numbering about 50) began on September 9, 1948, and was completed October 25, 1948 (Reclamation, 1950). Original markers were moved along with the interments when possible. White crosses mark gravesites in the relocated cemetery that had no markers in the original cemetery (Hopkins, 2008).

Unknown Site (10EL826) – The site form contains no site description or date of recordation. The location of the site is not known, and the point of site location in the site form was compiled by SHPO from available information (a mention of this site by Perry [no date] as being 2 miles south of Deer Creek). USFS manages the area on which this site is possibly located. However, this site does not appear in Boise National Forest (BNF) cultural resources information for the Anderson Ranch Reservoir area.

Historic Camp Site (10EL2485) – In 2013, BNF documented this site after it burned over in the Elk Fire. It is located along National Forest System Road 121 beside the South Fork Boise River downstream of Anderson Ranch Dam, approximately 1.25 miles northeast of the Reclamation Village (government camp for Reclamation employees involved in dam construction). The site is an historic, short-term occupation camp site, probably associated with dam construction. It has several features including a single-track roadbed running above the site with remains of telegraph or telephone poles and wires, a root cellar with a dry-stacked basalt boulder entryway, two dry-stacked stone walls, 10 square depressions organized in a grid-like pattern, a bulldozer push-pile indicating that the site was leveled, and two poured cement slabs possibly used for gas pumps.

Town of Pine (39-339) – Relocated. Discovered May 16, 1887, the mines at Pine Grove on the Rocky Bar road attracted considerable attention for a number of years, with British investment entering the district in 1892. The Franklin mine there is credited with a little over \$750,000 in gold before it shut down in 1917. The old town of Pine and the cemetery were relocated to a higher elevation when Anderson Ranch Reservoir was constructed. The site size is estimated at 80 acres. The site description states, “Old mine shaft and some of the buildings are still in existence.” The property is mostly privately owned. The resource has not been evaluated for eligibility and will not be directly affected by the proposed project.

South Boise Stage Road (39-930) – This 32-mile route opened in 1864 to bring miners to the South Fork Boise River and Rocky Bar (Idaho State Historical Society, 1964). The original route diverged from Goodale's Cutoff at Little Camas Creek and ran north to the South Fork Boise River (within what is now the Anderson Ranch Reservoir area), through Pine Grove and Featherville. It then followed Lincoln, Warrior, and Bear creeks to arrive in Rocky Bar. An alternative route diverged from Goodale's Cutoff at Cat Creek in Sec. 23, T1S, R9E. This

resource was determined eligible for listing in NRHP. According to Reclamation realty records, a route through and adjacent to the new reservoir largely matching the South Boise Stage Road route was acquired by the agency in 1946 from Elmore County. The county quitclaimed the land of that route to facilitate relocating county roads that would be inundated by the reservoir. Thus, the route of the South Boise Stage Road became an improved vehicular road called the Deer Creek (Pine-Hill City) road in the quitclaim deed from Elmore County in contract number 174r-163 dated 4/8/1946 (Reclamation, 1963).

Anderson Ranch Dam (39-1202) – Anderson Ranch Dam is located on the South Fork Boise River 40 miles southeast of Boise, Idaho. The dam is an earth and rock-fill structure with a maximum ultimate height of 456 feet above foundation rock, forming a reservoir of 493,000 acre-feet capacity. The power plant has a capacity of 30,000 kilovolt-amperes (kVA) furnished by two 15,000 kVA generating units installed under the present program with provisions for future installation of an additional 15,000 kVA unit. The Secretary of the Interior made a finding of feasibility on June 25, 1940. Construction of Anderson Ranch Dam was authorized in the Interior Department Appropriation Act of 1942.

Historic Building (39-8319) – The log building was recorded by Jennifer Eastman Attebery on behalf of the Idaho State Historical Society during the Log Architecture Survey on 10/5/1981. The notes state, “Sills, floor joists and remains of boards, round, peeled, inside walls hewn flat, around 14” diameter ends sawn, interstices filled with split poles inside, sq. notch, ends flush, no ext. covering, no int. covering, wire nails on chinking, none on notch, faces N., toward road, remains of cellar behind.” The point provided on the SHPO record search results appears to be estimated and not accurate due to the steep terrain. However, the area in the vicinity of the dam where the log building may have been located experienced a large fire in 2013. The building has not been re-located since that time, and the resource has not been evaluated. USFS does not include any information about this resource in its comprehensive GIS data provided to Reclamation.

Pine Road Bridge (39-18218) – Built in 1963, this bridge spanned the South Fork Boise River at the upper end of Anderson Ranch Reservoir at the town of Pine. In 2018 it was removed and replaced. The bridge was a concrete stringer/multi-beam or girder (5 spans) bridge and was determined ineligible for listing on NRHP on 2/17/2011. The current bridge is modern and does not meet the age requirements to qualify as a cultural resource.

Construction of Anderson Ranch Dam was authorized in the Interior Department Appropriation Act of 1942 in accordance with the plan described in House Document Number 916, Seventy-sixth Congress. The Secretary of the Interior made a finding of feasibility on June 25, 1940. Bids were opened at the office of the Bureau of Reclamation, Boise, Idaho on July 7, 1941, under Specifications Number 965. The contract, dated August 4, 1941 (Symbol I2r-I3229), was awarded to Morrison-Knudson Company, Inc.; J. F. Shea Company, Inc.; Ford J. Tweits Company; and Winston Brothers Company, of Boise, Idaho, on their low bid of \$9,986,203.00. Receipt of notice to proceed was acknowledged on September 27, 1941, but the work was actually started on August 7, 1941. The diversion tunnel was driven, concrete lining was completed, and the river diverted through the tunnel

on May 18, 1942. Placing of embankment in the cut-off trench was started on September 22, 1942 (Reclamation, 1947).

On December 26, 1942, the work was halted by the War Production Board except for several specific tasks. The contractor performed the following work covered by this restricted program during 1943 under an amendatory contract:

- Placed approximately 1,600 cubic yards of reinforced concrete at the inlet portal of the diversion tunnel.
- Backfilled the cut-off trench.
- Removed materials from the left abutment to the minimum extent necessary to protect the inlet or outlet of the diversion tunnel against stoppage.
- Other construction solely for purposes of safety or health or to avoid undue damage to or deterioration of materials already incorporated.

On October 6, 1943, the War Production Board approved, as a part of the War Food Program, the completion of the dam and reservoir, without power facilities or spillway gates, to provide supplemental water for irrigated land in the Boise River valley. A new contract, dated November 14, 1943 (Symbol I2r-I4823), was negotiated with the original contractor covering the performance of the following work on a cost-plus-fixed-fee basis:

- All required embankments, cut-off walls, grouting, and drainage systems.
- The outlet and diversion works as revised, with 400 feet of new inclined tunnel; all to the extent permitted by the terms of a memorandum dated October 6, 1943, from the Deputy Chairman, Facilities Committee of the War Production Board, to the Director, Governmental Division of the War Production Board, bearing the caption “Anderson Ranch Dam Project No. 984-A. Reference: Program Determination No. 397.”
- The spillway, including the parts to be embedded in concrete for the radial control gates, but not including the installation of those gates.
- The highway or highways around the reservoir area to replace those which will be inundated.
- Clearing the reservoir area.
- And all cleanup operations required after completion of the work.

All War Production Board restrictions were removed on October 15, 1945; negotiations were initiated on an agreement whereby the contractor would, under the cost-plus-fixed-fee contract, complete the remaining work including the powerplant, penstock and outlet pipes, spillway gates, and other items formerly prohibited by the War Production Board. By the end of 1945 the inclined outlet tunnel was excavated and lined with concrete, the hoist house substructure was virtually completed, the lower part of the inlet structure was completed, the fixed-wheel gate and hoist were installed, and the embankment had been completed to a sufficient height to permit closing the upstream end of the original diversion tunnel, marking the beginning of storage in the reservoir, on December 15, 1945.

By the end of 1946 the concrete plug at the intersection of the diversion and inclined outlet tunnels was completed; placing concrete for the inlet structure and hoist house was completed; painting the fixed-wheel gate and installation of the trash racks were completed; the rough excavation for the spillway, outlet structure, and powerplant was completed to an average elevation of 3870; considerable grouting had been accomplished in the plug section of the tunnel; the embankment cut-off walls were completed and there remained to place approximately 300,000 cubic yards of earth embankment; 165,000 cubic yards of rock fill; and 40,000 cubic yards of riprap to complete the top of the dam. Electric lighting had made it possible for the contractors to work around the clock. In addition, approximately 50,000 cubic yards of rock fill remained to be placed at the toe of the dam in the vicinity of the switchyard. A total of 3,000 acres of the reservoir area had been cleared, and rough excavation had been completed for 12 miles of the relocated reservoir roads (very little progress was made on the clearing and roads during 1946 because of lack of funds).

Because of uncertainties arising from the failure of Congress to appropriate sufficient funds for fiscal year 1947, the regular fiscal year 1946 funds were exhausted in February and the anticipated supplemental funds were not provided. This necessitated a complete shutdown of the work until fiscal year 1947 funds were made available. The funds provided for fiscal year 1947 were insufficient to support a full program, so no attempt was made to resume work on the reservoir road or on the reservoir clearing. Owing to the fact that the lack of funds did not permit recruiting workers until the latter part of June and first part of July when the available labor had been absorbed on other work, common labor and competent carpenters could not be obtained in sufficient numbers to carry on an aggressive concrete program. Some items of construction material were still difficult to obtain. This applied to lumber and reinforcement steel (Reclamation, 1947) and the Presidential work curtailment directive, negotiations were deferred with the result that no agreement had been reached by the end of 1947.

In the meantime, however, it was decided that the cost-plus-fixed-fee contract should be terminated early in 1948 and that the remaining work at Anderson Ranch Dam would be advertised for bids. The original construction program under the cost-plus-fixed-fee contract contemplated completing the dam embankment by December 1, 1946. This included all appurtenant features, including a temporary needle valve to be installed in the tunnel to permit the full storage possible without installing spillway gates, for the 1947 irrigation season. The shortage and inferior quality of labor and the inability to obtain certain items of materials and equipment prevented the realization of the anticipated construction progress (Reclamation, 1947). In September 1947 preparation of specifications for completion of Anderson Ranch Dam and powerplant were started. These specifications (No. 2053) were issued early in December and called for bids to be opened on January 6, 1948. At the end of 1947 preparation of specifications for completing the relocated reservoir roads and for completing the reservoir clearing was in progress (Reclamation, 1947).

The contract, dated June 2, 1948 (Symbol I2r-I8009), for the work covered by Specification No. 2127 to relocate reservoir roads was awarded to Hoops Construction Company of Twin Falls, Idaho, on their low bid of \$341,133.34. Receipt of notice to proceed was

acknowledged on July 29, 1948. Work was started on June 22, 1948. The original completion date for this work was January 25, 1949. Findings of Fact, dated August 16, 1949, extended the period of completion 199 calendar days, thereby fixing the final date for completion on August 12, 1949. All work was completed on August 9, 1949 (Reclamation, 1950).

The crest of the dam was raised 4 feet in 2010 as part of a security enhancement project. The crest raise was not designed as a water-retaining feature. The raised crest of the dam is 28 feet wide with a 20-foot-wide roadway and 3-foot-high jersey barriers on each shoulder. Anderson Dam Road is a county road that crosses the dam and serves as a main access to the west side of the reservoir, the South Fork Boise River, and to areas north and east of the reservoir, including the town of Prairie and the Trinity Mountains. The original 3-foot-high parapet wall is still in place on the upstream side of the original crest and the original 9-inch-high concrete curb is still in place on the downstream side; they retain the fill from the crest raise on the upstream and downstream sides of the dam. In addition, a small “control” building was added in front of the hoist house (west side) within the last 20 years.

Anderson Ranch Dam was determined to be eligible for listing in the NRHP under both Criterion A for its association with the Boise Project and its contribution to local agricultural development, and under Criterion C for its design and construction as the world's highest embankment dam at the time of its completion.

Reclamation Village (39-18222) – This site is on the west side of National Forest Service Road 113 and the South Fork Boise River approximately 2.5 miles downriver of Anderson Ranch Dam. The site represents the government camp for Reclamation employees involved in dam construction. In the fall and winter of 1941, government forces built 16 temporary wood frame, three- and four-room dwellings and 10 two-room cabins. The camp increased in size in 1942 with the completion of a dormitory, office building, garage and machine shop, and 11 residences all of permanent construction. Reclamation demolished most of the buildings left in the camp around 2000, the few that survived (remains of nine historic features including the dwelling, shop, well, and pumphouse, water system shed no. 1, water system shed no. 2, shed, tennis court, loading dock, and roads. The site was determined ineligible in 2015 because it did not meet evaluation criteria as a significant historical resource and retains very little historic integrity. The Reclamation Village site is at the base of a proposed borrow area that has been used for such purposes in the past.

Pine Airstrip (BS-2520) – A state-owned airstrip located on the shore of Anderson Ranch Reservoir. The airstrip is permitted by BNF and USFS. The site contains a single turf runway 2,300 feet long. The airstrip is classified by the Idaho Aviation Network as “developed,” meaning it has basic navigation aids and some additional services such as restrooms or camping facilities, may have road access to nearby attractions, and is typically located in an area of high use that may be accessed by improved roads. The airstrip is regularly maintained by clearing vegetation, removing obstacles, blading, mowing, fertilizing, watering, treating invasive and noxious weeds, and making spot treatments to maintain the improved airstrip surface.

According to records retained by BNF, the state of Idaho submitted paperwork to Reclamation during the construction of Anderson Ranch Reservoir for the lease of approximately 48 acres of government land to build and operate the airstrip. The lease, which began in 1948, did not require payment and would last 50 years. The airstrip seems to have been in service by 1950 as an emergency and recreational facility. In 1969, the land use permit was transferred from Reclamation to USFS for administration and management. Reclamation determined the airstrip ineligible for listing in the NRHP in 2019 because it did not meet evaluation criteria as a significant historical resource.

Fall Creek Resort and Marina (BS-2521) – Documents on file at BNF show that the Fall Creek Lodge was constructed no earlier than 1946 and was the subject of a trespass case. Most of the buildings that were constructed as part of the resort were found to be located on Reclamation land. Resolution of the trespass seems to have been handled through the issuance of a special use permit granted by USFS. The lodge was originally constructed by Mr. Earl Carter who had purchased the adjacent land in the mid-1940s from the state (with possibly dubious survey boundaries that led to the trespass). At the time of the initial lodge construction, Mr. Carter was reportedly employed by Reclamation as a cook in the dam contractor's mess hall during construction of Anderson Ranch Dam.

Fall Creek Resort and Marina rents out 45 camp sites and 11 hotel rooms. The lodge has a full-service restaurant and bar. The owners operate under a special use permit administered by BNF. The resort and marina are located on Reclamation-owned lands. The lodge is a wood-frame building with gable roof. It appears to have an original single-story section at the west end (approximately 82 feet by 52 feet) with a two-story extension (approximately 72 feet by 34 feet) that was added at an unknown later date attached at the eastern end. The two parts of the lodge have been treated uniformly on its exterior to match. The exterior walls of the building look to be done in vinyl Dutch lap siding (not original). The roof treatment is standing seam, concealed fastener metal (most likely steel for snow control, not original). The interior of the building is in unknown condition.

The construction date of the original marina building is unknown. The current marina building is a two-story, wood-frame building with what appears to be wood board siding. A visual inspection seems to show that the wood board siding high on the walls between the ends of the gable roof (on both east and west ends) to be older than the siding on the side walls. A rolling garage-style door has recently been installed on the west end of the building that opens to a newly added patio area. The shoreline side of the building showing the full two stories is in the midst of renovation and shows only particle board on the walls. The windows of the building all look to be modern. The interior of the marina building is in unknown condition. The campsites near the marina, along the shoreline, and near the lodge are simply cleared areas, some with concrete pads for vehicle parking. RV sites have hookups for water and power.

Reclamation determined the lodge and marina complex ineligible for listing in the NRHP in 2019 because it did not meet evaluation criteria as a significant historical resource.

HD 131 (BS-2539) – HD 131 —also known as NF 131, Prairie Road, or Cow Creek Road—is located in Township 2 South, Range 8 East, Sections 4, 5, and 9; Township 1 South, Range 8 East, Sections 6, 7, 19, 26, 31, and 32; and Township 1 South, Range 7 East, Sections 12, 13, 24, 25 and 36. The road crosses private, state, Bureau of Land Management, and USFS (BNF) lands and is operated and maintained in its entirety by the Elmore County Highway District. Its 12.15-mile length serves to connect Idaho State Highway 20 and HD 121 at the South Fork Boise River, which facilitates access to the mountain community of Prairie. It is dirt road for its entire length. The road is referred to by several different names. On the ground, a sign along Highway 20 indicates the route as Prairie Road because it provides access to and from a small mountain community called Prairie. Within BNF, the road is referred to as NF 131 and Cow Creek Road because of its proximity to that named creek and also, presumably, because of the Cow Creek Bridge at the terminus of the road just before it intersects with HD 121 across the South Fork Boise River.

Reference documents were provided by USFS that mention the Cow Creek Road (sometimes referred to as the Cow Creek grade). A mosaic of General Lands Office survey plat maps overlain with the current road route shows the road on a 1912 plat in the neighboring Section 8, and in Section 7 on a 1913 plat. The road route through Section 7 in 1913 appears farther east than the current route and may have largely run adjacent to the course of Cow Creek itself. Close examination of Google Earth imagery does not reveal a discernible roadcut or old path on the hills east of the creek. Historical documents, including the Simmons manuscript (Simmons, 1982) mention early 20th century residents heading Prairie to Mountain Home via “the Cow Creek grade” in a horse-drawn sled during winter, and that “the road to the Prairie was little better than a cow trail” (Simmons, 1982) but not enough details about the grade are provided to distinguish the actual route. The lack of distinctive switchbacks on the early plat do suggest that when the road was formalized for motorized vehicles, its route may have been altered for safer travel. The mail route to and from Prairie was changed from Arrowrock to Mountain Home around May 1, 1916, and Prairie residents increasingly travelled to Mountain Home for supplies and leisure (Dart, 2006).

The Civilian Conservation Corps (CCC) program (1933–1942) contributed labor in the area, and a camp was created along the South Fork Boise River near Danskin Bridge. A limited amount of information exists about the work performed by the CCC Danskin camp enrollees but documents indicate that work was primarily road construction. A spike camp was created on Cow Creek, perhaps pointing to road construction activities taking place in that area. However, no definitive information could be found to verify this, and the current alignment of the road does not appear on U.S. Geological Survey topographic maps until 1960 (Danskin Peak 15-minute quadrangle), suggesting the current route may have been created after the CCC program had ended. Therefore, a direct CCC connection to the construction of the road cannot be made. It is certain, though, that the current route of the road in the project area is not the original.

The pedestrian survey confirmed that a borrow source area exists partially within the current area of potential effect (APE). The Elmore County Highway Department confirms that it has

acquired material from this area for construction and maintenance of the roads for which it is responsible but did not have any readily available information about the active date(s) of use of the borrow area. Aerial photos show the initial use to be near the end of the 20th century. The paths along the hillside that were noted during the survey as related to the quarrying activities are confirmed on a 2009 aerial photo. The disturbance of the hillside for quarrying activities is, thus, entirely modern.

Reclamation determined HD 131 ineligible for listing in the NRHP in 2019 because it did not meet evaluation criteria as a significant historical resource.

HD 113, or Lake Creek Road (BS-2545), is a dirt road that totals 4.6 miles in length. It connects Fall Creek Road (HD 120) and Lester Creek Road (HD 128). Its route runs through Township 1 North, Range 9 East. According to agency records, it did not exist prior to the construction of Anderson Ranch Dam. Several new roads had to be constructed as a result of the inundation of Anderson Ranch Reservoir to facilitate vehicular travel to certain locations at and beyond the new waterbody. Planning was underway in 1942 according to information on pages 42-43 of the 1943 volume of the Boise Project History:

“Conferences were held during 1942 with the Forest Service and the County Commissioners to determine what new construction would be necessary to supply adequate roads to replace those covered by the reservoir. It was decided that a road...is to extend from the north end of the reservoir along the west side to Sloan’s Gulch, up Sloan’s Gulch and **across the flats, down Lake Creek to Fall Creek**, and from there around the north side of the reservoir to the dam...A 16-foot road bed, surfaced where necessary to make it passable in wet weather, is to be constructed...A preliminary line from the Dam to Fall Creek and from there to Sloan’s Gulch was run during the summer of 1943. The preliminary plans were approved by the Forest Service and the County Commissioners and construction was started from the dam in late November.” (Reclamation, 1943, emphasis added)

Essentially, the subject road was built to shortcut the distance between Fall Creek and the road to Pine on the north side of the reservoir (HD 128) now named Lester Creek Road but previously called the Sloan’s Gulch road. As described on page 56 of the 1947 volume of the Boise Project History:

“It became necessary for the Government to provide egress for the residents of Pine and vicinity after the existing [county] road was inundated. Rather than attempt to maintain the road from Fall Creek to Icy Springs and from Icy Springs to Sloan’s Gulch, an agreement was reached with Elmore County Commissioners whereby the Government would construct a temporary road from Fall Creek to the Icy Springs-to-Sloan’s Gulch road by way of Lake Creek. This involved the grading of 3.8 miles of road and the construction was started on October 20, 1947, and was completed on November 22, 1947.” (Reclamation, 1947)

The new HD 113 saved travelers 11 miles in what would otherwise have been a drive north along Fall Creek to Icy Springs (the current location of Ice Springs campground) via HD 123, then to the southeast toward Sloan’s Gulch on HD 128 (or vice-versa). The discrepancy in the early records about length of grading (3.8 miles) and total road length (4.6 miles) likely suggests that the 0.8 mile stretch of road between HD 128 and S. Aspen Drive had already been accomplished and only the 3.8 miles from that point to Fall Creek still required construction as of the autumn of 1947.

Reclamation determined HD 113 ineligible for listing in the NRHP in 2020 because it did not meet evaluation criteria as a significant historical resource.

HD 61—S. Pine-Featherville Road/Louse Creek Road (BS-2546)—runs between State Highway 20 (Sun Valley Highway) and the town of Pine, a distance of 18.1 miles. This paved road was constructed as a mitigation measure by the Government to remedy the inundation of nearly 20 miles of County and USFS roads by Anderson Ranch Reservoir.

The 32-mile route of the South Boise Stage Road (39-930) opened in 1864 to bring miners to the South Fork Boise River and Rocky Bar (Idaho State Historical Society, 1964). The original route diverged from Goodale's Cutoff at Little Camas Creek and ran north to the South Fork Boise River (within what is now the Anderson Ranch Reservoir area), through Pine Grove and Featherville. It then followed Lincoln, Warrior and Bear Creeks to arrive in Rocky Bar. According to Reclamation realty records, a route through and adjacent to the new reservoir largely matching the South Boise Stage Road route was acquired by the agency in 1946 from Elmore County. The County quitclaimed the land of that route to facilitate relocation of County roads that would be inundated by the reservoir. Thus, the route of the South Boise Stage Road had become an improved vehicular road called the Deer Creek (Pine-Hill City) road in the quitclaim deed from Elmore County in contract number 174r-163 dated 4/8/1946 (Reclamation, 1963).

Inundation of a portion of that County road caused the Government to provide a new route of access to the town of Pine, which itself had to be moved to a higher elevation location just northwest of its original site. Details of the relocated road work are included in several volumes of the Boise Project History on file with the Bureau of Reclamation. Work began in 1943:

Roads are being constructed around the reservoir to replace existing County and Forest Service roads within the reservoir area...On the south side of the reservoir new construction is required from the river crossing above Pine to a junction with Idaho State Highway 22 near Little Camas reservoir, a distance of approximately 18 miles. The new construction will provide a sixteen foot minimum roadway width...Construction of the reservoir roads was begun in November 1943 and the roadway excavation has been carried on during the winter months when equipment could be released from dam embankment operations. Rough excavation was completed for 9.3 miles of road by the end of 1944 and for 12.5 miles by the end of 1945. Of the total of 61,000 cubic yards of material excavated during 1945, 20,000 cubic yards were rock that required drilling and blasting. (Reclamation, 1945)

It is important to note that the Idaho State Highway 22 (SH 22) mentioned in the above excerpt is now US 20. According to the Wikipedia entry for Idaho State Highway 22, the route of the original SH 22 was based on Sampson Trails G and H from Mountain Home to Trude, which are essentially the route of today's US 20 from Mountain Home through Arco to Idaho Falls and US 26 east from there.

Information in the 1949 Boise Project History volume explained difficulties in maintaining the construction schedule before the road could be completed:

Relocated Reservoir Road: Work under the contract with Hoops Construction Company was suspended in December 1948 because of severe winter weather and was not resumed until June 1949.

The work done during 1949 included placing concrete in the abutment walls for the Deer Creek bridge, excavating 31,850 cubic yards of all classes of material for roadway, placing 1,115 cubic yards of backfill and 1,735 cubic yards of riprap, installing six culverts, erecting timber in four bridges, placing of all surfacing between Pine, Idaho and Highway 22, ditching and final grading of the road. [Reclamation, 1949]

The original completion date for this work was January 25, 1949. Findings of Fact, dated August 16, 1949, extended the period of completion 199 calendar days, thereby fixing the final date for completion on August 12, 1949. All work was completed on August 9, 1949...The Elmore County Commissioners were notified by registered letter, dated August 15, 1949 and received on August 17, 1949 of the completion of the relocated reservoir roads. By failure to register complaint within the period specified by the contract between the Government and Elmore County covering the relocation of the reservoir roads (Symbol No. 174r-163), the County automatically accepted the reservoir roads on September 16, 1949. [Reclamation 1949]

Initial construction of HD 61 involved a concrete bridge over Deer Creek, indicating that the existing culvert is not original to the road system. Records on loan from the USFS were scoured for information regarding the date of culvert replacement as Elmore County Highway District records were not available. However, specific info about the Deer Creek bridge was not found. During the first half of the 1960s, records do indicate that some bridges were beginning to be replaced with culverts in the Boise National Forest because of concerns with the weight and width of timber loads being hauled down from the mountains. Additionally, a bridge replacement and upgrade program was initiated within the USFS in the latter half of the 1970s. However, no information specific to Deer Creek was located, leaving only physical and observable evidence of the culvert's condition to approximate its age as less than 50 years.

Reclamation determined HD 61 ineligible for listing in the NRHP in 2020 because it did not meet evaluation criteria as a significant historical resource.

Old Lester Road (MSF-19-07) – An 1896 plat map of the mouth of Lester Creek clearly shows a wagon road with one end at a cluster of buildings labeled "Lester" at its southern terminus (an area now fully inundated by Anderson Ranch Reservoir). The northern end of the road joined what is now Lake Creek Road (NF 113) on top of the nearest hills. According to the plat map, the entire length of the Old Lester Road was 15,095 feet (2.86 miles). Only the segment of the road on Reclamation land above the high-water line was surveyed.

No information could be found about a possible townsite called Lester. No information could be found to determine the actual construction date of the road, or information about when the road was put out of use, though it may have been around the time of the construction and filling of the reservoir. It was noted that realty records made by Reclamation at the time of construction of the reservoir included quitclaims of county roads that would be affected by the water levels. However, there is no record of the Old Lester Road being included in those quitclaim deeds, suggesting that either the road was not in regular use in the mid-1940s, or that it was never formally recognized as a county road. The roadbed is now overgrown with vegetation and is currently used primarily by animals as a game trail.

2.5 Alternative C –Anderson Ranch Dam 3-foot Raise

Cultural resources were investigated within the primary study area of Alternative C, which is almost equivalent to the APEs defined by the Section 106 of the NHPA process for Alternative B (Figure 1). The project area boundaries include: the land areas around the reservoir perimeter above the current high water mark (4196 feet) plus 3 feet (4199 feet) and additionally to the proposed full pool water elevation plus 3 feet (4202 feet) that would be subject to new erosion and not too steep for human use or occupation; the dam and spillway and related features; proposed borrow areas; proposed contractor use areas; proposed road realignment of HD 131; and proposed culvert improvement projects on HD 113 and HD 61, all of which are also included in Alternative C.

The Section 106 process is required only for the preferred alternative, Alternative B. Because Alternative C is a smaller-scale version of the preferred alternative, cultural resource investigations for Alternative C were essentially covered in the Section 106 work for Alternative B. As stated above, it consisted of a phased approach that included Native American consultation, pre-field research, field surveys, and resource documentation. All aspects of the cultural resource study were conducted in accordance with the Secretary of the Interior's Guidelines for Identification of Cultural Resources (48 CFR 44720-44723).

2.5.1 Environmental Setting

The environmental setting for Alternative C is identical to that outlined above in 2.3 for Alternative B.

2.5.2 Vegetation

The vegetation for Alternative C is identical to that outlined above in 2.3.1 for Alternative B.

2.5.3 Fisheries

The fisheries information for Alternative C is identical to that outlined above in 2.3.2 for Alternative B.

2.5.4 Geology

The geology information for Alternative C is identical to that outlined above in 2.3.3 for Alternative B.

2.6 Cultural Setting

2.6.1 Pre-Contact

The pre-contact cultural setting for Alternative C is identical to that outlined above in 2.4.1 for Alternative B.

2.6.2 Post-Contact

The post-contact cultural setting for Alternative C is identical to that outlined above in 2.4.2 for Alternative B.

2.6.3 Existing Resources

The existing resources for Alternative C are identical to that outlined above in 2.4.3 and in Table 1.

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3 Environmental Consequences

3.1 Methods for Evaluating Impacts

Impacts of potential project activities to cultural resources have been identified in two categories: inundation and reduction or elimination of historical significance. These impacts are evaluated in terms of their context and the intensity of their effects to the cultural resource.

3.1.1 Inundation

For this analysis, topographical LiDAR data (a light-based remote sensing method) is used to project the new reservoir water level elevation with a 6-foot increase. A shapefile of the new full pool plus four feet contour water elevation (4206) is compared to cultural resource locations within a GIS and evaluated for possible overlap.

3.1.2 Reduction or Elimination of Historical Significance

Documenting the cultural resources involved in this analysis includes identifying significance criteria. These criteria comprise the historical importance and integrity of the resource, and a reduction or loss of these criteria would be considered adverse to the cultural resource. For this analysis, the evaluation performed during the Section 106 process to identify adverse effects will be used as an equivalent method for evaluating adverse impacts.

3.2 Impact Indicators

The following indicators, consistent with federal regulations for the protection of historic properties (36 CFR 800) and treatment of historic properties (36 CFR 68) were used to assess impacts to cultural resources for this analysis:

- Physical destruction of or damage to all or part of the resource.
- Alteration of a resource, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's standards for the treatment of historic properties (36 CFR Part 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

Potential impacts on cultural resources were evaluated based on the assumption that environmental commitments including compliance with applicable laws, regulations, and Executive Orders, standard Reclamation best management practices, and cultural and historical mitigation measures would be implemented as part of the proposed activities to avoid, minimize, and mitigate environmental impacts.

Assessing the significance or importance of likely impacts must be done by considering the context and intensity of the impacts. "Context" is defined as the geographic, biophysical, and social context in which the effects will occur. The regulations mention society as a whole, the region, and affected interests as examples of context. "Intensity" refers to the severity of the impact, in whatever context(s) it occurs. Impacts may be both beneficial and adverse. The regulations require that a number of variables be addressed in measuring intensity, such as the following.

- 1) Effects on public health and safety
- 2) "Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas"
- 3) The potential for controversy on environmental grounds
- 4) Uncertainty about effects or unique risks
- 5) The potential for establishing a precedent or representing a decision in principle that defines the parameters of a further action
- 6) Cumulative impacts
- 7) Potential adverse effects on "districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places," and the potential for "loss or destruction of significant scientific, cultural, or historical resources"
- 8) Potential adverse effects on an endangered or threatened species or its habitat, or on a critical habitat
- 9) Potential for violation of a Federal, state, or local law or requirement "imposed for the protection of the environment" (40 CFR 1508.27).

In this analysis, impacts to cultural resources are assessed using variables 6, 7, and 9, primarily, as well as consideration of changes to historic integrity and changes to functionality. Impacts are graded as either "significant" or "insignificant." Impacts are considered significant if the context is greater than local, includes more than one variable of intensity from the list above, and also results in changes to historic integrity and/or functionality of the resource. Impacts are considered insignificant if the context is locally

confined, one or fewer variables of intensity is recognized, historic integrity does not change perceptibly, or the function of the resource is not removed.

3.3 Direct and Indirect Impacts by Alternative

This section provides consideration of the possible impacts to cultural resources in each alternative. Direct impacts occur as a result of the proposed action, at the same time and place of implementation (40 CFR 1508.8). Indirect impacts occur as a result of the proposed action but later in time or farther in distance from the action (40 CFR 1508.8).

3.3.1 Alternative A – No Action

Under the No-Action Alternative, physical conditions regarding the reservoir water level would not change, the dam crest would not be elevated, and no borrow areas or contractor use areas would be used. None of the cultural resources in Table 2 would be impacted directly or indirectly by either of the two categories defined in this study (i.e., inundation and reduction or elimination of historic significance).

3.3.2 Alternative B – 6-foot Anderson Ranch Dam Raise

Under Alternative B, the dam crest would be elevated 6 feet and physical conditions regarding the reservoir water level would change in some areas of new inundation affecting a number of contributing features, the identified borrow areas and contractor use areas would be used, and the HD 131 road would require realignment of an approximately 1,000-foot section to shortcut a hairpin curve. According to inundation map data analysis and proposed activities involved in this alternative, 15 cultural resources are within the project APEs. Six cultural resources would be impacted by activities and/or results of this alternative action, including Anderson Ranch Dam (site number 39-1202), the South Boise Stage Road (site number 39-930), the Pine Airstrip (site number BS-2520), the Fall Creek Resort and Marina (site number BS-2521), the Old Lester Road (site number MSF-19-07), and HD 131 (site number BS-2539).

3.3.2.1 Direct and Indirect Impacts

A summary of the direct and indirect impacts identified for the resources involved in Alternative B, as well as the assessed significance of the impacts, is outlined below in Table 2. Discussions related to each resource and the impact assessments are also included.

Table 2. Impacts to Cultural Resources in Alternative B and Alternative C

Site Number	Site Name	Direct Impact	Indirect Impact	Significance
10EL745	Pine Cemetery	No direct impact identified	No indirect impact identified	Not applicable
10EL826	Unknown	No direct impact identified	No indirect impact identified	Not applicable
10EL2485	Historic Camp Site	No direct impact identified	No indirect impact identified	Not applicable
39-339	Town of Pine	No direct impact identified	No indirect impact identified	Not applicable
39-930	South Boise Stage Road	Slight change in the property's setting with higher reservoir water level; potential recreation area may change or destroy part of the roadbed	No indirect impact identified	INSIGNIFICANT IMPACT: The road is no longer used for vehicular travel so function will not be impacted. The slightly additional amount of inundation will not adversely affect historic integrity.
39-1202	Anderson Ranch Dam and Powerplant	Major physical alteration of the dam to its core, major physical changes to contributing features such as the spillway, radial gate situation, and parapet walls, and minor changes to hoist house	Possible loss of integrity to such a degree that the resource would no longer be eligible for listing in the NRHP	SIGNIFICANT IMPACT: Extensive physical changes to the dam and its contributing features would essentially create a new structure, different than the original historic property, drastically and adversely affecting its historic integrity.
39-8319	Historic Building	No direct impact identified	No indirect impact identified	Not applicable
39-18218	Pine Road Bridge	No direct impact identified	No indirect impact identified	Not applicable
39-18222	Reclamation Village	No direct impact identified	No indirect impact identified	Not applicable
39-18309 (BS-2520)	Pine Airstrip	Inundation of southern end of landing strip	Inundation may reduce usability for a time or necessitate a relocation of the	SIGNIFICANT IMPACT: Inundation may limit or prevent continued use of the

Site Number	Site Name	Direct Impact	Indirect Impact	Significance
			airstrip to continue service	airstrip unless the resource is relocated, so functionality is at stake.
39-18310 (BS-2521)	Fall Creek Resort and Marina	Inundation of lower story of marina building	Work to lessen or prevent inundation may reduce usability for a time or necessitate a relocation of the building to continue service	SIGNIFICANT IMPACT: Inundation may limit or prevent continued use of the airstrip unless the resource is relocated, so functionality is at stake.
BS-2539	HD-131	Realignment of approximately 1,000-feet to shortcut a hairpin curve	Construction could impact public use for a short time.	INSIGNIFICANT IMPACT: The realignment will not change the ownership, management, function, or seasonal usability of the resource over the long-term.
BS-2545	NF-113	No direct impact identified	No indirect impact identified	Not applicable
BS-2546	NF-61	No direct impact identified	No indirect impact identified	Not applicable
39-18311 (MSF-19-07)	Old Lester Road	Abandoned roadbed that once connected a group of buildings called Lester near the mouth of Lester Creek to the "main" road above the river valley	No indirect impact identified	INSIGNIFICANT IMPACT: The road is no longer used for vehicular travel so function will not be impacted. The road does not have historical significance so integrity will not be adversely affected.

The South Boise Stage Road (39-930) route is located near the mouth of Lime Creek. Projected inundation data show that the water level would increase and cover about 8 additional feet of the existing roadbed (Figure 2). However, the road is not significant for its physical nature but for the role it played in providing access to mining districts along the South Boise River. The actions involved with Alternative B, when assessed in their context and intensity, would not adversely impact the resource. If a replacement recreation area is constructed in this location, direct physical impacts are probable, but the intensity of the

impacts would depend on the recreation site design, which has not yet been created. No foreseeable indirect impacts were identified because of the lack of functionality and of this resource.

The direct impact would be insignificant. The road is no longer used for vehicular travel so function will not be impacted. The slightly additional amount of inundation will not adversely affect historic integrity.

Anderson Ranch Dam (39-1202) would see the greatest direct effects under this alternative action (Figure 3). As a historic property eligible for listing in the NRHP, the dam's significance is two-fold. First, it is significant for its association with and contribution to the Boise Project and the agricultural development that resulted. Second, the dam is significant for its original design and engineering as the highest earthen dam in the world at the time of its completion. Raising the dam would effectively make it a different structure. In addition, contributing features would all see significant changes that would reduce or remove their original historic integrity. The actions involved with Alternative B, when assessed in their context and intensity, would adversely impact Anderson Ranch Dam and its contributing features by reducing several aspects of its historic integrity. A possible indirect impact would be removing the resource's eligibility for listing in the NRHP under Criterion C due to the extensive loss of integrity.

The direct impacts would be adversely significant. Extensive physical changes to the dam and its contributing features would essentially create a new structure, different than the original historic property, drastically and adversely affecting its historic integrity. The indirect impact would be adversely significant if re-evaluation of this property results in a change to its eligible status.

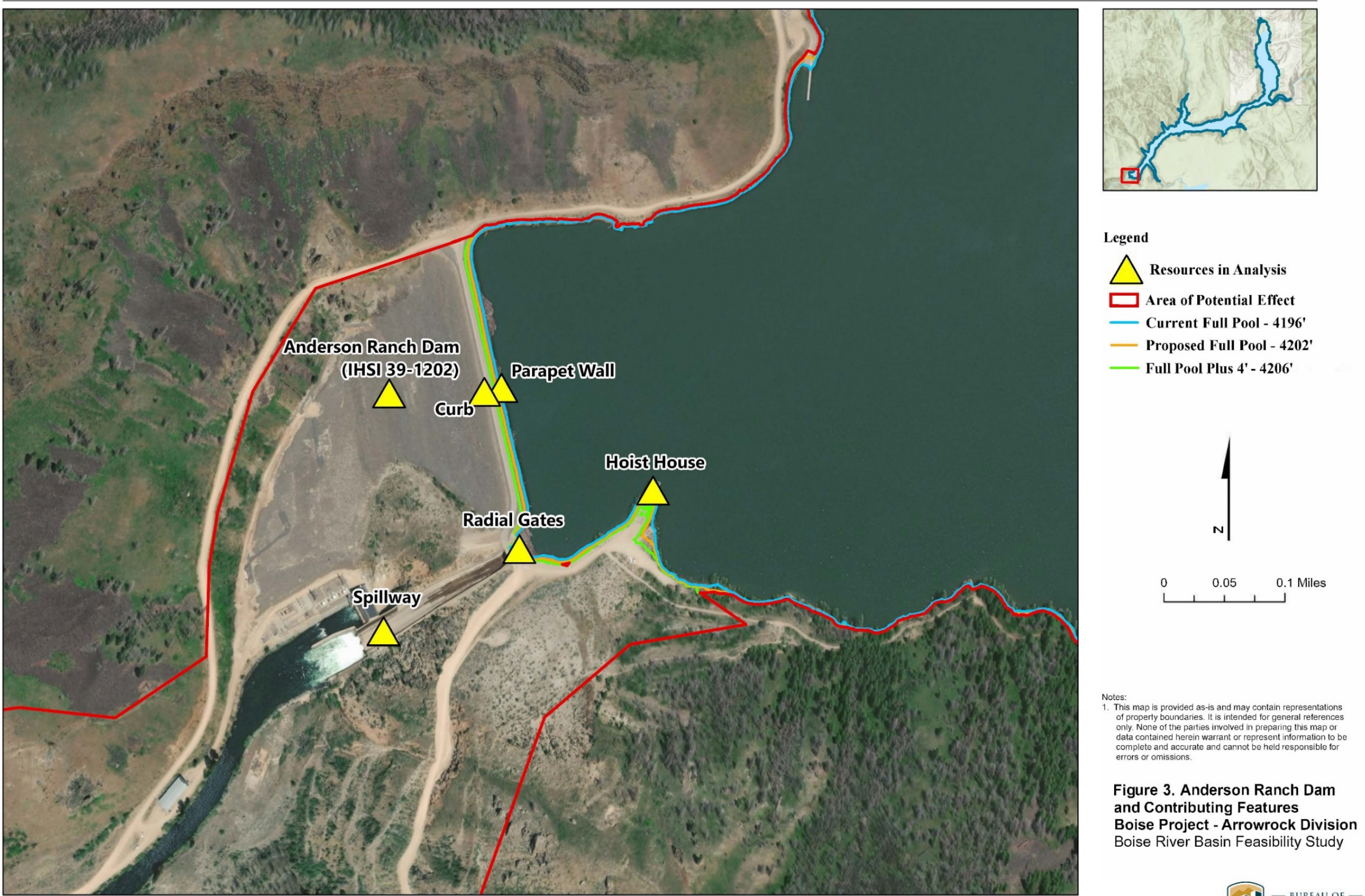
The Pine Airstrip (39-18309/BS-2520) is located on a flat projection adjacent to the reservoir shoreline south of the town of Pine. Projected inundation data show that alternative actions could inundate a portion of the runway (Figure 4). The Pine Airstrip has no historical significance, and Reclamation has determined it to be ineligible for listing in the NRHP. However, as a cultural resource under NEPA, inundation would directly and adversely impact the resource through an alteration (e.g., inundation) that would render it unusable. The function of the airstrip is its current cultural significance. The direct impacts would be adversely significant. Inundation may limit or prevent continued use of the airstrip unless the resource is relocated, impacting functionality.

Possible indirect effects to the airstrip may be the relocation of the airstrip in order to continue service. If the airstrip remains in this location, additional erosion control considerations that occur at the south end of the airstrip complex. Regular maintenance efforts for the airstrip may need to include monitoring of the new shoreline and/or retaining walls to assess their integrity and ability to safeguard the pilots and aircraft that utilize the airstrip. These indirect effects would not impact the significance of the resource; the Pine Airstrip would still be considered ineligible for listing in the NRHP.

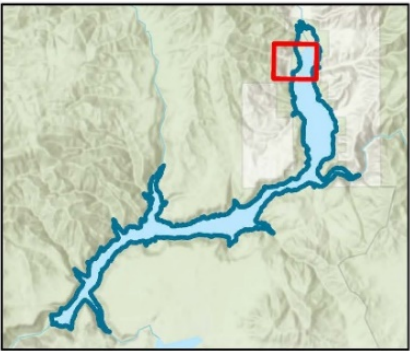
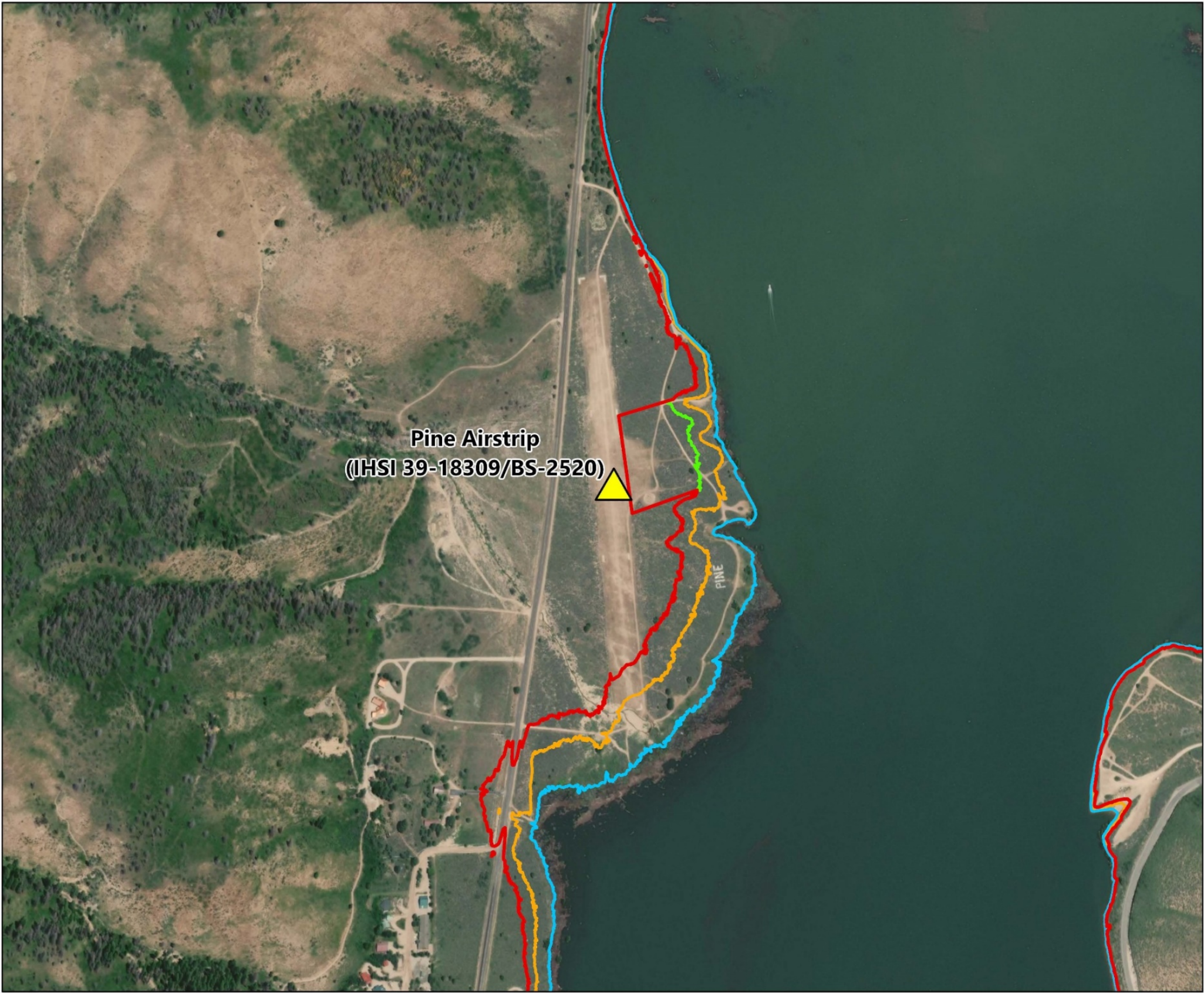


Figure 2. South Boise Stage Road Inundation
Boise Project - Arrowrock Division
Boise River Basin Feasibility Study

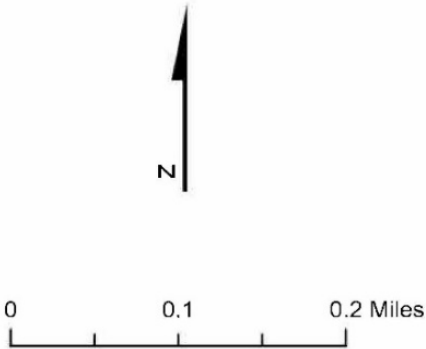
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- Legend**
- Resources in Analysis
 - Area of Potential Effect
 - Current Full Pool - 4196' Proposed
 - Full Pool - 4202'
 - Full Pool Plus 4' - 4206'



Notes:
1. This map is provided as-is and may contain representations of property boundaries. It is intended for general references 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.

Figure 4. Pine Airstrip Inundation
Boise Project - Arrowrock Division
Boise River Basin Feasibility Study

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The Fall Creek Resort and Marina (39-18310/BS-2521) is located at the mouth of Fall Creek. Projected inundation data show that the water level would increase along the shoreline at the base of the marina building (Figure 5). Fall Creek Resort and Marina has no historical significance, and Reclamation has determined it to be ineligible for listing in the NRHP. However, as a cultural resource under NEPA, alternative actions could directly and adversely impact the marina building through partial inundation. The usability of the marina building is its current cultural significance. The direct impacts would be adversely significant. Inundation may limit or prevent continued use of the airstrip unless the resource is relocated, impacting functionality.

The possible indirect effects of the rise in water level in the marina area of this cultural resource complex may necessitate a redesign of the new shoreline area to relocate recreational activities, potentially impacting usability during construction. The existing use permit may need to be rewritten and reissued by the USFS to reflect the updated recreational offerings and locations. These indirect effects would not impact the significance of the resource; the Fall Creek Resort and Marina would still be considered ineligible for listing in the NRHP.

HD 131 (BS-2539) is also known as NF 131, Prairie Road, or Cow Creek Road. It is proposed to be a haul route, but an existing hairpin curve would be impassable for a large, heavily loaded construction trucks. Realigning an approximately 1,000-foot section of the road would result in abandonment of the hairpin curve (Figure 6). The HD 131 road has no historical significance, and Reclamation has determined it to be ineligible for listing in the NRHP. However, as a cultural resource under NEPA, alternative actions could directly but temporarily impact the road by altering the current route (not the historical route). The usability of the road by vehicular traffic is its current cultural significance. The direct impacts would be insignificant. The ownership, management, function, and seasonal usability of the road for transportation purposes would not be changed over the long term.

No indirect effects other than temporary road construction inconveniences for road users are foreseen for the realignment of a portion of this road because ownership, maintenance, function, and seasonal usability would not change.

The Old Lester Road (39-18311/MSF-19-07) (MSF-19-07) is located adjacent to Lester Creek. Projected inundation data show that the water level could cover small sections of the roadbed in three places where it dips and rises along the shoreline hills (Figure 7). Old Lester Road has no historical significance, and Reclamation has determined it to be ineligible for listing in the NRHP. As a cultural resource under NEPA, inundation would not directly impact the roadbed because it has been abandoned for human use. No indirect impacts were identified.

The direct impact would be insignificant. The road is no longer used for vehicular travel so function will not be impacted. Inundation time would be slightly increased but will not adversely affect historic integrity.

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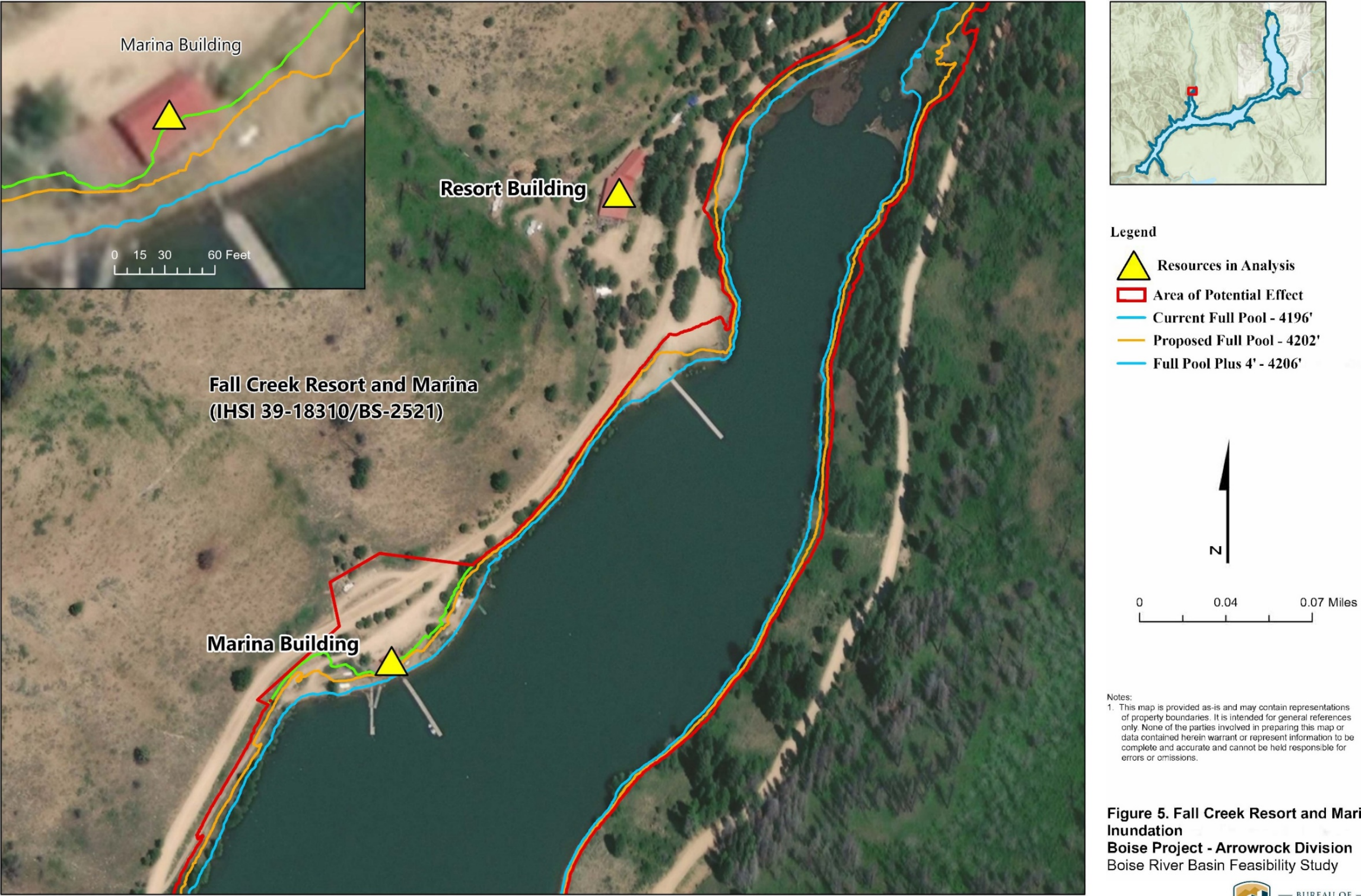


Figure 5. Fall Creek Resort and Marina Inundation
Boise Project - Arrowrock Division
Boise River Basin Feasibility Study



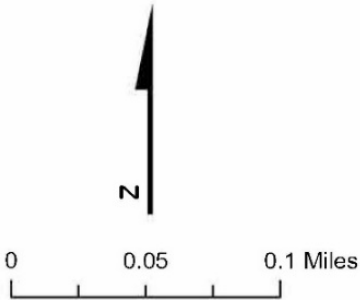
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Legend

HD 131 Realignment

Highway District Roads



Notes:

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Figure 6. HD 131 Realignment
Boise Project - Arrowrock Division
Boise River Basin Feasibility Study



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3.3.2 Alternative C – 3-foot Anderson Ranch Dam Raise

Under Alternative C, the dam crest would be elevated 3 feet and physical conditions regarding the reservoir water level would change in some areas of new inundation affecting a number of contributing features, the identified borrow areas and contractor use areas would be used, and HD 131 would require realigning an approximately 1,000-foot section to shortcut a hairpin curve. According to inundation map data analysis and proposed activities involved in this alternative, 15 cultural resources are within the project APEs. Six cultural resources would be impacted by activities and/or results of this alternative action, including Anderson Ranch Dam (39-1202), the South Boise Stage Road (39-930), the Pine Airstrip (BS-2520), the Fall Creek Resort and Marina (BS-2521), HD-131 (BS-2539), and Old Lester Road (MSF-19-07). These are identical to those involved and affected by Alternative B. Direct and indirect impacts to all of the sites under Alternative C would be the same as Alternative B except for Pine Airstrip.

Pine Airstrip (39-18309/BS-2520) is located on a flat projection adjacent to the reservoir shoreline south of the town of Pine in T2N, R10E, W ½ NE ¼ and NW ¼ SE ¼ of Section 31. Evaluation of the Pine Airstrip for NRHP eligibility found that it does not meet any of the main criteria for historical significance, and Reclamation has determined it to be ineligible for listing. However, as a cultural resource under NEPA, a raise in elevation of the reservoir water level would directly and adversely impact the southern portion of the resource within its site boundary through an alteration (e.g., inundation). The function of the airstrip is its current cultural significance. An indirect impact may be the construction of retaining walls to hold the water levels back and would preserve the usability of the airstrip but slightly change the feeling of that area.

3.3.2.2 Direct and Indirect Effects and Significance

The direct and indirect impacts identified for the resources involved in Alternative C, as well as the assessed significance of the impacts, are identical to those outlined in Alternative B (Table 2). Discussions related to each affected resource and the impact assessments for Alternative C are identical to those of Alternative B (Section 3.3.3).

3.4 Cumulative Effects

Cumulative effects are analyzed for the Alternative B and Alternative C. Cumulative effects are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The cumulative effects analysis considers projects, programs, and policies that are not speculative and are based on known or reasonably foreseeable long-range plans, regulations, operating agreements, or other information that establishes them as reasonably foreseeable. While no present actions are identified, Reclamation has identified two past actions: Pine Bridge at the South Fork Boise River and the 4-foot Anderson Ranch Dam crest raise for security enhancement. Reclamation has also identified two potential future projects to be considered for the cumulative impact

analysis: Cat Creek Energy Project and South Fork Boise River Diversion Project. Additional project proposal information for these, as known by Reclamation to date, is provided in Chapter 2 of the EIS.

The newly replaced Pine Bridge is not an NRHP eligible structure. Replacing the bridge as part of this project will not have any cumulative impacts to cultural resources. Multiple parts of the dam are NRHP eligible as discussed in this report. The 4-foot crest raise of Anderson Ranch Dam will be removed and replaced as part of the proposed action and not have cumulative effects.

The cultural resources identified for Alternatives B and C are located outside what is understood to be the CCE project area, and no cumulative impacts to these resources from that project are foreseen. Similarly, the proposed South Fork Boise River Diversion project area, as it is currently understood, would largely be outside the dam raise project area. Cultural resources identified for Alternatives B and C would not be impacted by the proposed diversion project.

3.4 Mitigation

3.4.1 Alternative A – No Action

No mitigation would be necessary.

3.5.2 Alternative B – 6-foot Anderson Ranch Dam Raise

Anderson Ranch Dam (39-1202). Mitigation for the adverse impacts to this historically significant structure may involve compensating for the impact through education or documentation measures that would benefit the public. This form of mitigation will be negotiated with SHPO and consulting parties through the Section 106 process. Mitigation would be appropriate and commensurate to the extent of the adverse effects in a way to lessen the impacts of the project on the cultural resource. A mitigation Memorandum of Agreement will be developed that outlines measures to resolve the unavoidable adverse effects from this project.

The South Boise Stage Road (39-930). No mitigation is necessary.

The Pine Airstrip (BS-2520). Mitigation for this impact of making the south acre of the landing strip unusable may take the form of compensating for the impact by shortening, relocating, or realigning the airstrip. This form of mitigation would help alleviate the impacts of the action on the resource and the people who depend on it for a service.

The Fall Creek Resort and Marina (BS-2521). Mitigation to prevent the usability of the ground floor of the marina building because of inundation (and potentially deteriorating its structural integrity) may take the form of compensating for the impact by construction of a cofferdam or other berm structure to prevent inundation. Relocation of this building is also a possible form of compensation mitigation. This form of mitigation would help alleviate the impacts of the action on the resource and the people who depend on it for a service.

HD-131 (BS-2539). No mitigation would be necessary.

The Old Lester Road (MSF-19-07). No mitigation would be necessary.

3.5.3 Alternative C – 3-foot Anderson Ranch Dam Raise

Mitigation for resources impacted by Alternative C are identical to that outlined for Alternative B (Section 3.4.2).

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