



— BUREAU OF —
RECLAMATION

Boise River Basin Feasibility Study

Specialist Report:

Aesthetics

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
CFR	Code of Federal Regulations
Forest Plan	<i>Boise National Forest Amended Forest Plan</i>
HD	Highway District
KOP	key observation point
NEPA	National Environmental Policy Act
NFS	National Forest Service
Pub. L.	Public Law
Reclamation	Bureau of Reclamation
ROS	Recreational Opportunity Spectrum
U.S. 20	U.S. Highway 20
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
VQO	visual quality objective

Table of Contents

1. Introduction.....	1
1.1 Regulatory Framework	2
1.1.1 National Environmental Policy Act.....	2
1.1.2 Wild and Scenic Rivers Act, 1986.....	2
1.1.3 National Historic Preservation Act of 1966, Section 106 (16 USC 470f)	3
1.1.4 Scenery Management System	3
2. Affected Environment	5
2.1 Anderson Ranch Reservoir	5
2.2 Methods for Describing the Existing Aesthetic Resources.....	6
2.2.1 Scenic Attractiveness	7
2.2.2 Recreational Opportunities Setting Characteristics	8
2.2.3 Visual Character.....	8
2.2.4 Scenic Integrity	8
2.2.5 Concern Level.....	9
2.2.6 USFS Visual Quality Objective	9
2.3 Anderson Ranch Dam – Key Observation Points.....	10
2.3.1 KOP No. 1 Below Dam on South Fork Boise River	10
2.3.2 KOP No. 2 On Dam	15
2.3.3 KOP No. 3 View of Dam from Southwest	17
2.3.4 KOP No. 4 HD 120, East of Dam.....	19
2.3.5 KOP No. 5 Fall Creek Resort and Marina	21
2.3.6 KOP No. 6 Pine Campground.....	23
2.3.7 KOP No. 7 Curlew Creek Campground	25
2.3.8 KOP No. 8 Lime Creek Bridge.....	27
3. Environmental Consequences.....	31
3.1 Methods for Evaluating Impacts	31
3.1.1 Assumptions.....	32
3.1.2 Impact Indicators and Significance Criteria	32

3.2 Direct, Indirect, and Cumulative Impacts	33
3.2.1 Alternative A – No Action	33
3.2.2 Alternative B – Anderson Ranch Dam Six-Foot Raise	38
3.2.3 Summary and Significance	45
3.3 Alternative C – Anderson Ranch Dam Three-Foot Raise	47
3.3.1 Direct and Indirect Impacts	48
3.3.2 Summary and Significance	52
3.3.3 Cumulative Impacts	55
3.3.4 Mitigation.....	56
4. References	57

List of Figures

Figure 1. Key observation points	11
Figure 2. KOP No. 1 looking west.....	13
Figure 3. KOP No. 1 looking east.....	13
Figure 4. KOP No. 1 looking north.....	14
Figure 5. KOP No. 2 (on dam looking east)	16
Figure 6. KOP No. 2 (on dam looking west)	16
Figure 7. KOP No. 3 (view of dam looking northeast).....	18
Figure 8. KOP No. 4 (HD 120, east of dam, looking west).....	20
Figure 9. KOP No. 4 (HD 120, east of dam, looking south)	20
Figure 10. KOP No. 5 (Fall Creek Resort and Marina, looking north)	22
Figure 11. KOP No. 5 (Fall Creek Resort and Marina, looking south)	23
Figure 12. KOP No. 6 (Pine Campground looking northeast).....	24
Figure 13. KOP No. 6 (Pine Campground looking south).....	25
Figure 14. KOP No. 7 (Curlew Creek Campground looking east).....	26
Figure 15. KOP No. 7 (Curlew Creek Campground looking west).....	26
Figure 16. KOP No. 8 (Lime Creek Bridge looking west)	28
Figure 17. KOP No. 8 (Lime Creek Bridge looking east)	29

Figure 18. Example of bathtub ring	34
Figure 19. Low water looking toward Pine Campground, October 2018.....	35
Figure 20. Low water at Lime Creek Bridge, October 2018	35
Figure 21. Low water at Curlew Campground, October 2018	36

List of Tables

Table 1. Visual quality objectives for the Anderson Ranch Reservoir area	10
Table 2. KOP No. 1 scenic assessment.....	14
Table 3. KOP No. 2 scenic assessment.....	17
Table 4. KOP No. 3 scenic assessment.....	19
Table 5. KOP No. 4 scenic assessment.....	21
Table 6. KOP No. 5 scenic assessment.....	23
Table 7. KOP No. 6 scenic assessment.....	25
Table 8. KOP No. 7 scenic assessment.....	27
Table 9. KOP No. 8 Scenic Assessment	29
Table 10. Alternative A – No-Action – significance summary	37
Table 11. Alternative B – Anderson Ranch Dam Six-Foot Raise – significance summary.....	46
Table 12. Alternative C – Anderson Ranch Dam Three-Foot Raise – significance summary.....	52

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 on aesthetics as described in the EIS.

1.1 Regulatory Framework

Regulatory framework in place to guide the analysis of aesthetic resources surrounding the Anderson Ranch Reservoir, Idaho, includes the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] 4321 et seq.); NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1500-1508); Wild and Scenic Rivers Act, 1986 (Public Law [Pub. L.] 90-542); and the National Historic Preservation Act of 1966, amended through Pub. L. 102-575.

1.1.1 National Environmental Policy Act

Aesthetic values including visual resources are generally addressed in the environmental review of federal projects through NEPA. NEPA requires federal agencies, including the Bureau of Reclamation (Reclamation), to consider the potential environmental impacts of their proposed actions and any reasonable alternatives before undertaking a major federal action, as defined by 40 CFR § 1508.18. For Reclamation, NEPA compliance is triggered by a discretionary federal action that is subject to Reclamation control and responsibility (40 CFR § 1508.18). The nature of the action could either be project construction, granting a permit, providing federal funding, or any other action where a federal decision is required. Reclamation's NEPA Handbook (Reclamation, 2012) states, "Effects include those involving ecological (natural resources and the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health resources, whether direct, indirect, or cumulative."

1.1.2 Wild and Scenic Rivers Act, 1986

This act requires preserving certain selected national rivers that—with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values—shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. During the development of the Land and Resources Management Plan from 1997–2001, the U.S. Forest Service (USFS) conducted a Wild and Scenic River eligibility study for rivers in Idaho. The study determined that 15 rivers with 31 segments were found to be eligible for designation as wild, scenic, or recreational, including three segments on the South Fork Boise River (USFS 2010, Appendix

D). Officially designated as wild, scenic, or recreational requires an Act of Congress, which has yet not occurred for segments of the South Fork Boise River.

1.1.3 National Historic Preservation Act of 1966, Section 106 (16 USC 470f)

Section 106 requires any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking in any state and the head of any federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. Adverse effects can include “introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features” (36 CFR 800.5).

1.1.4 Scenery Management System

Some federal agencies, such as USFS, are required to manage visual resources in larger management areas. In response to increasing environmental concerns, USFS developed the Scenery Management System to inventory, classify, analyze, and manage its visual resources. The primary objective of the system is to maintain and enhance the natural appearance of the characteristic landscape while actively managing various resources such as timber, grazing, wildlife, and recreation. The Scenery Management System measures and evaluates two main elements: the natural and built features of the land and the public’s concern for scenic quality. USFS has developed visual quality objectives (VQOs) for visual and aesthetic resources for the lands surrounding the Anderson Ranch Reservoir. USFS aesthetic values and scenic resources are managed for the conservation of scenic values that contribute to public enjoyment. The VQOs are, therefore, considered in the analysis of aesthetic resources.

Page intentionally left blank.

2. Affected Environment

Chapter 1 of the EIS describes the purpose and need and general location of the project potentially affected by the alternatives that were evaluated under the Boise River Basin Feasibility Study. Chapter 2 of the EIS presents a description of the alternatives in detail. This chapter describes the affected environment related to aesthetics for the proposed alternative.

2.1 Anderson Ranch Reservoir

The primary project area relating to alternatives refers to the general vicinity in and around Anderson Ranch Reservoir. Before the Anderson Ranch Dam was constructed in 1950, the area was a river valley. A valley is a low area between hills or mountains typically with a river running through it. In geological terms, a valley is a depression that is longer than it is wide. The terms U-shaped and V-shaped are descriptive terms to characterize valley shape. The primary project area for the alternatives encompasses Anderson Ranch Reservoir and surrounding shore and valley slopes, and a portion of the South Fork Boise River below the Anderson Ranch Reservoir dam.

Anderson Ranch Reservoir is in Elmore County, Idaho, 28 miles northeast of Mountain Home, Idaho. The main access to the Anderson Ranch Reservoir area is by paved U.S. Highway 20 (U.S. 20) from Interstate 84 to Highway District (HD) road 134 to Anderson Ranch Reservoir. Other access routes include HD 168 and HD 61 from U.S. 20. HD 120 parallels a portion of the north shore of the reservoir. Anderson Ranch Reservoir is easy to reach by vehicle because the roads are well maintained.

Anderson Ranch Dam construction inundated the South Fork Boise River valley, as well as numerous tributaries. The diversity of visual experiences at Anderson Ranch Reservoir and the surrounding slopes is influenced by the natural setting and man-made features such as the Anderson Ranch Dam, boat ramps, roads, campgrounds, and electrical transmission facilities. Seasonal variations include fluctuating water levels and vegetation color that is intensely green during the wetter seasons and more tan in color in the drier seasons. A variety of commercial, agricultural, and residential uses occur on or near the reservoir. Special use authorizations include a designated utility corridor containing the Idaho Power distribution lines, operations along Anderson Ranch Road, and utility corridors to private inholdings.

The land is characterized by gentle to steep slopes that are weakly to strongly dissected by streams. Slopes vary from 5 degrees to 60 degrees. The surface geology is primarily volcanic basalts south of the South Fork Boise River, and Idaho batholith granitic to the north. 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. Arid shrublands wraps around the reservoir, but the camping areas are forested and lush with vegetation.

One eligible Wild and Scenic River—the South Fork Boise River—falls within the impact area of the proposed action. The South Fork Boise River has three segments: from Anderson Ranch Dam to Mennecke Creek, from Mennecke Creek to Trail Creek, and from Trail Creek to Crank Creek. The segment beginning just below Anderson Ranch Reservoir to Mennecke Creek, is eligible for a recreational classification for outstanding recreational, geologic, and heritage values. The Mennecke Creek to Trail Creek segment is eligible as scenic and has outstanding recreation and geologic values. Trail Creek to Crank Creek is eligible as wild and has outstanding scenic, recreation, and geologic values.

The scenic resources include the steep-walled basalt canyon with talus slopes, rock formations, canyon enclosures, and isolation. The river offers large volume and flow, rapids and cascades, meandering waterways, and clear water. There are occasional alluvial benches and ponderosa pine on the gentler slopes, which create a diverse setting. The river corridor offers a wide variety of recreational activities including fishing, sightseeing, wildlife viewing, swimming, hunting, hiking, biking, and non-motorized boating, and attracts visitors from throughout the United States. Portions of the river corridor are accessible year-round, offering a long season of recreational opportunities. Geology within the river area includes a sequence of volcanic, metavolcanic, metamorphic, metasedimentary, and volcanic features. This diverse set of features exhibit the turmoil and constant geologic change the area was going through over the past 850 million years. This area is of exceptional educational and scientific value because of the rare physical features exhibited.

2.2 Methods for Describing the Existing Aesthetic Resources

USFS manages Reclamation lands at Anderson Ranch Reservoir via an interagency agreement (USFS and Bureau of Reclamation, 1987). The 2010 *Boise National Forest Amended Forest Plan* (Forest Plan) establishes VQOs for the Lower South Fork Boise River, including Anderson Reservoir; however, the Forest Plan does not include a detailed description of the scenic environment (USFS, 2010).

The description of this resource is based on existing field observations and photographs. Although a detailed inventory of existing aesthetic resources was not developed for this project, the USFS Scenery Management System was used to provide an overall framework for describing aesthetic resources. In addition, the guidance in the *Agriculture Handbook Number 701, Landscape Aesthetics: A Handbook for Scenery Management Survey and Analysis* was also used to develop the descriptions of the scenery in the project area (U.S. Department of Agriculture [USDA], 1995).

Key observation points (KOPs) are specific viewing locations around the project area. They are used to describe the existing aesthetic environment and, in the following sections, describe the potential changes to this resource. The methods and definitions from the USFS Scenery Management System framework are used as the basis for describing the affected environment for aesthetic resources.

Each KOP is divided into distance zones. Three primary distance zones were used, as appropriate, to characterize the viewsheds described in the following sections. These distance zones, described below, are *foreground zone*, *middle ground zone*, and *background zone*.

- *Foreground zone* (0 to 0.5 mile)—At a foreground distance, people can distinguish small boughs or leaf clusters, tree trunks and large branches, individual shrubs, clumps of wildflowers, medium-sized animals, and medium to large birds.
- *Middle ground zone* (0.5 mile to 4 miles)—At a middle ground distance, people can distinguish individual tree forms, large boulders, flower fields, small openings in the forest or tree line, and small rock outcrops. Form, texture, and color remain dominant and pattern is important.
- *Background zone* (4 miles to horizon)—At a background distance, people can distinguish groves or stands of trees, large openings in the forest, and large rock outcrops. Texture is not detectable, and color has flattened, but large patterns of vegetation or rocks are still distinguishable, and landform ridgelines and horizon lines are the dominant visual characteristics.

The distance zones for each KOP are described by the following attributes.

- Scenic attractiveness
- Recreational opportunities setting characteristics
- Visual character
- Scenic integrity
- Concern level
- USFS VQO.

2.2.1 Scenic Attractiveness

Scenic attractiveness is classified by the following.

- Class A “distinctive”—Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, intactness, order, harmony, uniqueness, pattern, and balance.
- Class B “typical”—Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide ordinary or common scenic quality. These landscapes generally have positive, yet common, attributes of variety, unity, vividness, intactness, order, harmony, uniqueness, pattern, and balance.
- Class C “indistinctive”—Areas where landform, vegetation patterns, water characteristics, and cultural features have low scenic quality. Water and rock forms of any consequence are often missing in Class C landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, intactness, order, harmony, uniqueness, pattern, and balance.

Class A and Class B visual resources are typically found in state or federal parks, recreation areas, and wilderness areas, including rivers and lakes. Class C resources generally are areas that have low scenic quality and consist of more common landscapes.

2.2.2 Recreational Opportunities Setting Characteristics

The USFS Recreation Opportunity Spectrum (ROS) is a framework for defining the types of recreation opportunities available. The ROS includes descriptions of setting characteristics (USFS, 1982) as a means of describing the user density and facilities. These terms and definitions are used as part of the aesthetic environmental description for each applicable distance zone for each KOP.

- **Primitive**—Area is characterized by essentially unmodified natural environment of fairly large size. Interactions between users are very low and evidence of other users is minimal. Motorized use within the area is not permitted.
- **Semi-primitive Non-motorized**—Area is characterized by predominately natural and natural-appearing environment of moderate to large size. Interaction between users is low but there is often evidence of other users. Motorized use within the area is not permitted.
- **Semi-primitive Motorized**—Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low but there is often evidence of other users. Motorized use is permitted.
- **Roaded Natural**—Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of users. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Conventional motorized use is provided for in facility construction and design.
- **Rural**—Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetation cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by many people. Facilities for intensified motorized use and parking are available.

2.2.3 Visual Character

The visual character is a function of both the natural and man-made landscape features that make up a view. The character of any given area is influenced by geologic, hydrologic, botanical, wildlife, recreational, and man-made features. Form, line, color, and texture are the basic components used to describe visual character.

2.2.4 Scenic Integrity

Each primary distance zone would also be classified by its scenic integrity. Scenic integrity indicates the degree of intactness and wholeness of the landscape character; conversely,

scenic integrity is also a measure of the degree of visible disruption of the landscape character. The visual elements of adjacent landscapes and natural areas, buildings, structures, and operations define a visual character or context with which the proposed uses and facilities are compatible or in conflict. A landscape with very minimal visual disruption is considered to have high scenic integrity. Those landscapes having increasingly discordant relationships among scenic attributes are viewed as having diminished scenic integrity. Scenic integrity is expressed in terms of very high (unaltered); high (appears unaltered, deviations are not evident); moderate (appears slightly altered, deviations are visually subordinate); low (appears moderately altered, deviations begin to dominate the landscape); and very low (appears heavily altered).

2.2.5 Concern Level

Concern level is the measure of concern for scenic resources and the response to changes to the elements of the natural and constructed environments the viewer experiences through sight. The effects of those changes on viewers depends on the types of users, the amount of use (number of viewers and view frequency), and adjacent land uses. Landscapes are viewed to varying degrees from different locations and subsequently different levels of their importance. This importance can be ranked by concern levels.

Concern levels are a measure of the degree of public importance placed on landscapes viewed from travel ways and use areas. Concern levels are divided into three categories: level 1, level 2, and level 3. Primary travel ways and high use area are generally rated level 1, primary travel ways and moderate use areas are generally rated at level 1 or level 2, and secondary travel ways and low-use areas are generally rated level 3 (USDA, 1995). Concern levels are an indicator of the number of viewers that may be affected by the change in the aesthetic environment. Due to the recreational nature of the setting, many of the areas along the reservoir would be level 1 or 2.

2.2.6 USFS Visual Quality Objective

The VQOs from the *Boise National Forest Amended Forest Plan* established for the Lower South Fork Boise River, are presented in Table 1.

Table 1. Visual quality objectives for the Anderson Ranch Reservoir area

Travel Route or Use Area	Visual Quality Objective								
	Foreground			Middle Ground			Background		
	Scenic Attractiveness Class			Scenic Attractiveness Class			Scenic Attractiveness Class		
	A	B	C	A	B	C	A	B	C
Anderson Ranch Reservoir and Recreation Sites	R	R	PR	R	PR	PR	R	PR	M
South Fork Boise River	R	R	PR	R	PR	PR	R	PR	M

R = retention, PR – partial retention, M = modification.

Retention refers to landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

Partial retention refers to landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

Modification refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

2.3 Anderson Ranch Dam – Key Observation Points

Eight Anderson Ranch Dam raise KOPs (Figure 1) were selected to describe the aesthetic environment for Alternative B. These eight KOPs represent different geographic locations along the shoreline, and places that attract visitors throughout the project area.

2.3.1 KOP No. 1 Below Dam on South Fork Boise River

KOP No. 1 is located approximately 3 miles below and west of the dam on the South Fork Boise River. KOP No. 1 is in a narrow portion of the river valley. The river flows along the south and is flanked by HD 121 on the north side of the valley floor. Figure 2, Figure 3, and Figure 4 show the views in KOP No. 1. Table 2 shows the KOP No. 1 scenic assessment.

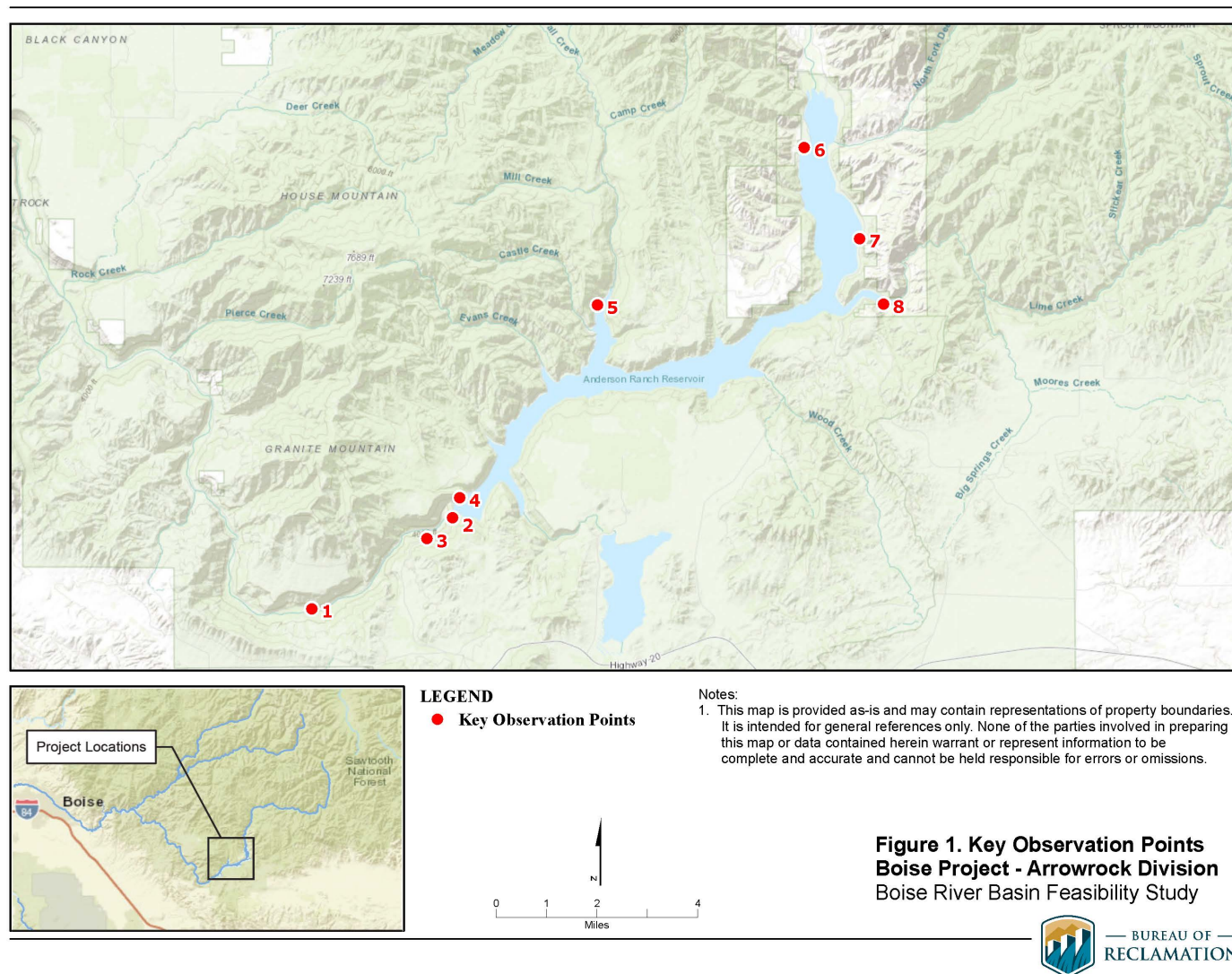


Figure 1. Key observation points

Page intentionally left blank.



Figure 2. KOP No. 1 looking west



Figure 3. KOP No. 1 looking east



Figure 4. KOP No. 1 looking north

Table 2. KOP No. 1 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunity Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class B - Typical	Roaded Natural	Moderate	1	R - Retention
Middle ground	Class B - Typical	Primitive	High	1	R - Retention
Background	NA		NA	NA	NA

NA = not applicable

The *foreground zone* is Class B (typical) and is characterized as roaded natural. The area contains a swift-moving river on the south of HD 121 and a maintained dirt road on the north of the river valley floor. The ground slopes upward immediately on the south side of the river at 40- to 50-degree slopes. The valley floor provides a flat bench for the road with the ground sloping upward at 30 degrees to 40 degrees. Vegetation is a primarily shrubs and grasses. Barren light gravelly soils are visible. Colors are predominately soft greens, grays, and tans. Textures are coarse. Seasonal variation would include higher or lower water levels in the river channel. Activities in this area include fishing, driving, and hiking along the trails and

river. This zone is altered by the road and trails; however, the road is subordinate to the overall landscape. The area is viewed from a primary travel way with high use and is determined to be concern level 1.

The *middle ground zone* is Class B, primitive. The hills slope 20 degrees to 60 degrees on the north and south. Vegetation is primarily shrubs and grasses. Barren light gravelly soils are visible. Colors are predominately soft greens, grays, and tans. Textures vary from soft vegetation to hard talus and lava rock sills and escarpments. Activities in this area include off-trail hiking. This zone is undeveloped and unaltered, any deviations are not evident on landscape. The area is viewed from a primary travel way with high use and is determined to be concern level 1.

The background zone is not visible from KOP No. 1.

2.3.2 KOP No. 2 On Dam

KOP No. 2 is located on top of Anderson Ranch Dam. KOP No. 2 is in a narrow portion of the river valley corridor and the reservoir is flanked by steep valley walls. HD 121 is cut into the north valley wall. The valley walls slope upward on the northwest and southeast sides. The prominent view is of the reservoir. Figure 5 and Figure 6 show the views in KOP No. 2. Table 3 shows the KOP No. 2 scenic assessment.

The *foreground zone* is a Class B (typical) and rural. The immediate foreground is a large still body of water, the dam, and supporting structures. The foreground is flanked by 20- to 40-degree slopes. The slopes are barren, and the minimal vegetation consists primarily of shrubs and grasses. The soil is light in color strewn with dark lava rock. Textures are smooth water surface and coarse rocky and vegetated slopes. Seasonal variation would include the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, driving along the road and dam, and viewing. This zone is altered by the dam, structures, and road; however, the body of water dominates the man-made structures from this vantage point looking east. Looking west the dam structures and road dominate the landscape. The area is viewed from a moderate to high use area and is determined to be concern level 1



Figure 5. KOP No. 2 (on dam looking east)



Figure 6. KOP No. 2 (on dam looking west)

The *middle ground zone* is also Class B and is roaded natural. Looking east, the hills slope 20 degrees to 60 degrees to the north and south. Vegetation is sparse and is primarily shrubs and grasses. Barren light gravelly soils are visible. Colors are predominately greens, grays, and tans. Textures include soft vegetation to hard escarpments. Seasonal variation would include

the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, and driving along the road. Looking east this zone is altered by the road and fluctuating water levels; however, the body of water and upper valley walls dominate the man-made structures.

Looking west and downstream, the hills slope 20 degrees to 60 degrees to the north and south. Vegetation is primarily shrubs and grasses and less sparse. Barren light gravelly soils are visible. Colors are predominately greens, grays, and tans. Textures vary from soft vegetation to hard talus and lava rock sills and escarpments. Activities in this area include driving along HD 121. This zone is altered by the road; however, the road is subordinate to the landscape. The area is viewed from a moderate to high use area and is determined to be concern level 1.

The *background zone* is also Class B in both east and west directions, and primitive. The background is a narrow view of distant mountains framed by the *middle ground zone* valley walls. Colors and textures are muted and hazed by the atmosphere. Seasonal variation might include greener vegetation during wetter periods and snow cover during the winter. No development is visible, this zone appears unaltered. The area is viewed from a moderate to high use area and is determined to be concern level 1.

Table 3. KOP No. 2 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunity Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class B - Typical	Rural	Low	1	R - Retention
Middle Ground	Class B - Typical	Roaded Natural	Moderate	1	PR – Partial Retention
Background	Class B - Typical	Primitive	High	1	PR – Partial Retention

2.3.3 KOP No. 3 View of Dam from Southwest

KOP No. 3 is just over ½ mile south of the dam on HD 134. KOP No. 3 is higher in elevation than the dam. The predominant view in KOP No. 3 is the dam and spillway. Figure 7 shows the view in KOP No. 3. Table 4 shows the KOP No. 3 scenic assessment.

The *foreground zone* is a very narrow strip of road shoulder that falls steeply downward and is not visible. Therefore, for this analysis, it is not applicable.

The *middle ground zone* is Class C (indistinctive) and rural. The combination of valley walls, escarpments, dam infrastructure, and reservoir form a vista that is unique, but fragmented and disharmonious. The dam is a dominate feature and is smooth in texture. The surrounding landscape varies in texture from smooth water, soft vegetation, to coarse rocky walls.

Vegetation is sparse and primarily shrubs and grasses with scarce, small tree stands. Barren light patches of soils and darker steep to vertical escarpments are visible. Colors are predominately greens, grays, and tans. Seasonal variation would include the “bathtub ring” as the reservoir water level drops.



Figure 7. KOP No. 3 (view of dam looking northeast)

Activities in this area include driving along the road. This zone is altered by the dam; however, the dam is what creates this uniqueness of this zone and is a cultural feature. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.

The *background zone* is Class B (typical) primitive. The background is a narrow view of distant mountains framed by the middle ground valley walls. Colors and textures are muted and hazed by the atmosphere. Seasonal variation might include greener colors during wetter periods and snow cover during the winter. No development is visible, and this zone appears unaltered. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.

Table 4. KOP No. 3 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunities Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	NA	NA	NA	NA	NA
Middle Ground	Class C – Indistinctive	Rural	Low	2	R - Retention
Background	Class B - Typical	Primitive	High	2	PR – Partial Retention

2.3.4 KOP No. 4 HD 120, East of Dam

KOP No. 4 is located along the northwest edge of the reservoir approximately ½ mile north of the dam. KOP No. 4 is in a narrow portion of the water-filled valley and flanked to the northwest by steep sloping mountain, the reservoir immediately the south and east, and the opposing valley wall less than ½ mile across the reservoir to the south and east. The reservoir is visible to the southwest. Figure 8 and Figure 9 show the views in KOP No. 4. Table 5 shows the KOP No. 4 scenic assessment.

The *foreground zone* is Class B (typical) and rural. The immediate foreground is a large still body of water, the maintained dirt road, dam and supporting structures, and the sloped valley sides. The slopes are barren with minimal vegetation consisting of primarily shrubs and grasses. There are stands of live and dead trees. The soil is light in color strewn with dark lava rock. Textures are smooth water surface, soft vegetation, and coarse slopes. Across the reservoir is the opposing slope and escarpment of dark lava rock. The slope is covered with dark patches of lava scree and shrubs. Trees punctuate the slopes and flat top. Seasonal variations include the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, and driving along the road. This zone is altered by the dam, structures, and road; however, the body of water and valley wall dominate the man-made structures from this observation point. This zone is altered by the dam, associated structures, and the road; it is apparent at this observation point that the body of water is created by a man-made structure and the valley has been inundated due to the dam. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.



Figure 8. KOP No. 4 (HD 120, east of dam, looking west)



Figure 9. KOP No. 4 (HD 120, east of dam, looking south)

Table 5. KOP No. 4 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunities Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class B - Typical	Rural	Moderate	2	R - Retention
Middle Ground	Class B - Typical	Roaded Natural	Moderate	2	PR – Partial Retention
Background	Class B - Typical	Primitive	High	2	PR – Partial Retention

The *middle ground zone* is Class B and roaded natural. Looking east, the hills slope 20 degrees to 60 degrees to the north and south. Vegetation is primarily shrubs, grasses, and ponderosa pine stands. Barren light gravelly soils are visible along the edge of the road in patches. Colors are predominately greens, grays, and tans. Textures vary from soft vegetation to hard road and rock. Seasonal variation includes the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, and driving along the road. Looking southwest toward the dam, a rockslide area is visible as is the HD134 cut into the side of the valley wall. This zone is altered by the road; however, the road is subordinate on landscape. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.

The *background zone* is Class B in both the northeast and southwest directions and is primitive. The background is a narrow view of distant mountains framed by the middle ground valley walls. Colors and textures are muted and hazed by the atmosphere. Seasonal variation includes greener vegetation during wetter periods and snow cover during the winter. No development is visible; this zone appears unaltered. The area is viewed from a primary travel way with moderate area and is determined to be concern level 2.

2.3.5 KOP No. 5 Fall Creek Resort and Marina

KOP No. 5 is located at the Fall Creek Resort and Marina. KOP No. 5 is in a narrow inlet jutting north from the main central portion of Anderson Ranch Reservoir. This inlet is flanked by moderate to steep sloping valley walls. HD 120 runs along the west edge and HD 113 on the east edge of the inlet. The valley walls slope upward on the east and west sides. The prominent view is of the narrow valley and reservoir. Figure 10 and Figure 11 show the views in KOP No. 5. Table 6 shows the KOP No. 5 scenic assessment.

The *foreground zone* is Class B (typical) and rural. The immediate foreground is a still body of water flanked by sloping valley walls. The area includes a lodge, parking lot, boat ramp, and supporting structures. The foreground is flanked by 30- to 60-degree slopes. The slopes are either covered in dense stands of pines or with minimal vegetation of primarily shrubs and grasses with exposed soil. Textures are smooth water surface, soft vegetation, and coarse

trees and rocky slopes. Seasonal variation includes the “bathtub ring” and reservoir bottom exposure on the north end of the inlet as the reservoir water level drops. Activities in this area include boating, fishing, camping, picnicking, hiking, and driving. This zone is altered by the lodge, parking lot, boat ramp, supporting structures, and road; however, the body of water and valley walls dominate, and vegetation partially obscures the man-made structures. The area is viewed from a primary travel way with high to moderate use and is determined to be concern level 1.

The *middle ground zone* is Class B and roaded natural. This zone is only visible to the south. The visible valley walls slope 30 degrees to 40 degrees from the water. Vegetation is sparse and primarily shrubs and grasses dotted with ponderosa pine and dead trees. The road cut is visible. Barren light gravelly soils are visible. Colors are predominately greens, grays, and tans. Textures include soft vegetation and hard soils and rock. Seasonal variation includes the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, and driving along the road. This zone is altered by the road; however, the road is subordinate on landscape. The area is viewed from a primary travel way with high to moderate use and is determined to be concern level 1.

The *background zone* is not visible from KOP No. 5.



Figure 10. KOP No. 5 (Fall Creek Resort and Marina, looking north)



Figure 11. KOP No. 5 (Fall Creek Resort and Marina, looking south)

Table 6. KOP No. 5 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunities Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class B - Typical	Rural	Moderate	1	R - Retention
Middle Ground	Class B - Typical	Roaded Natural	Moderate	1	PR – Partial Retention
Background	NA	NA	NA	NA	NA

2.3.6 KOP No. 6 Pine Campground

KOP No. 6 is located at the Pine Campground on the west side of the north end of the reservoir. KOP No. 6 is in one of the wider portions of the reservoir at full pool (water level of the reservoir at normal operating conditions). Anderson Ranch Reservoir is flanked by sloping valley walls to the west and east, water to the south, and a flat field to the north. HD 128 runs north and south along the west side. The prominent view is of the reservoir and surrounding hills. Figure 12 and Figure 13 show the views in KOP No. 6. Table 7 shows the KOP No. 6 scenic assessment.

The *foreground zone* is a Class C (indistinctive) and rural. The immediate foreground is a large still body of water flanked by sloping valley walls. Facilities include the campground

with parking lot, boat ramp, picnic shelters, fire pits, fencing, and comfort station. Road cuts are visible in the slopes. The foreground is flanked by 30- to 60-degree slopes. The slopes are barren with minimal vegetation consisting of primarily shrubs and grasses. The soil is light in color. Textures are smooth water surface, soft vegetation, and coarse slopes. Seasonal variation includes the “bathtub ring” on steeper valley walls and hundreds of feet of exposure of the flat to gentle sloping, light colored, silted bottom as the reservoir water level drops. Activities in this area include boating, fishing, driving along the road and on the exposed reservoir bottom, camping, and picnicking. This zone is altered by the recreational facilities and road, which dominate the foreground. The area is viewed from a primary travel way and in a high to moderate use area and is determined to be concern level 1.

The *middle ground zone* is also Class B and roaded natural. Looking east, the hills slope 20 degrees to 60 degrees to the north and south. Vegetation is sparse and consists primarily of shrubs and grasses dotted with trees and tree stands. Barren light to tan patches of soils are visible. Colors are predominately greens, grays, and tans. Textures are indistinguishable to soft. Seasonal variations include the “bathtub ring” as the reservoir water level drops exposing the flat, silted reservoir bottom. Activities in this area include boating, fishing, and driving along the road and on the exposed reservoir bottom. This zone is altered by the road and fluctuating water levels; however, the body of water and sloping valley walls dominate the man-made structures. The area is viewed from a primary travel way and in a high to moderate use area and is determined to be concern level 1.



Figure 12. KOP No. 6 (Pine Campground looking northeast)



Figure 13. KOP No. 6 (Pine Campground looking south)

The *background zone* is also Class B and primitive. The background is a narrow view of distance mountains framed by the middle ground valley walls. Colors and textures are muted and hazed by the atmosphere. Seasonal variation includes greener colors during wetter periods and snow cover during the winter. No development is visible; this zone appears unaltered. The area is viewed from a high to moderate use area and is determined to be concern level 2.

Table 7. KOP No. 6 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunity Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class C - indistinctive	Rural	Low	1	R - Retention
Middle Ground	Class B - Typical	Roaded Natural	Moderate	1	PR – Partial Retention
Background	Class B - Typical	primitive	High	2	PR – Partial Retention

2.3.7 KOP No. 7 Curlew Creek Campground

KOP No. 7 is located at the Curlew Creek Campground on the east side of the northern end of Anderson Ranch Reservoir. KOP No. 7 is in the widest portions of the reservoir at full

pool. The reservoir is flanked by sloping valley walls to the east, north, and south, and water to the west. There are also flat fields to the north. HD 61 runs north and south along the east side of the reservoir. The prominent view is of the reservoir and surrounding river valley hills. Figure 14 and Figure 15 show the views in KOP No. 7. Table 8 shows the KOP No. 7 scenic assessment.



Figure 14. KOP No. 7 (Curlew Creek Campground looking east)



Figure 15. KOP No. 7 (Curlew Creek Campground looking west)

The *foreground zone* is Class C (indistinctive) and rural. The immediate foreground is a large still body of water flanked by sloping valley walls. Facilities include the campground with parking lots, picnic tables, fire pits, comfort station, boat ramp, and dock. The foreground is flanked by 30- to 60-degree slopes. There are tree stands within the picnicking and camping areas. The slopes are barren with minimal vegetation consisting of primarily shrubs and grasses. The soil is light in color. Road cuts are visible in the slopes. Textures are smooth water surface, soft vegetation, and coarse slopes. Seasonal variation includes the “bathtub ring” on steeper valley walls and hundreds of feet of exposure of the flat to gentle sloping, light colored, silted bottom as the reservoir water level drops. Activities in this area include boating, fishing, driving along the road and on the exposed reservoir bottom, camping, and picnicking. This zone is altered by the recreational facilities and road; man-made structures dominate the foreground. The area is viewed from a high use area and is determined to be concern level 1.

The *middle ground zone* is Class C and roaded natural. Looking west, the hills slope 20 degrees to 60 degrees to the north and south. Vegetation is sparse and is primarily shrubs and grasses dotted with trees and tree stands. Barren tan patches of soils are visible. Colors are predominately greens, grays, and tans. Textures are indistinguishable to soft. Seasonal variation includes the “bathtub ring” as the reservoir water level drops. Activities in this area include boating, fishing, and driving along the road. This zone is dominated by the body of water and sloping valley walls; however, it is noticeably altered by the road and fluctuating water level. The area is viewed from a high use area and is determined to be concern level 1.

The *background zone* is not visible from KOP No. 7.

Table 8. KOP No. 7 scenic assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunity Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class C – Indistinctive	Rural	Low	1	R - Retention
Middle Ground	Class C – Indistinctive	Roaded Natural	Low	1	PR – Partial Retention
Background	NA		NA	NA	NA

2.3.8 KOP No. 8 Lime Creek Bridge

KOP No. 8 is located at the Lime Creek Bridge on HD 61. KOP No. 8 is in a narrow inlet flanked by steep valley walls. HD 61 flanks the south, east, and north sides of the inlet. A bridge crosses Lime Creek on the east end of the inlet. There is a small pullout on the north side near the east end for parking and launching small boats when the water levels are high. The prominent view is of the inlet and immediate slopes. Figure 16 and Figure 17 show the views in KOP No. 8. Table 9 shows the KOP No. 8 scenic assessment.

The *foreground zone* is Class B (typical) and roaded natural. The inlet is to the west and the creek enters the inlet from the east. The foreground is flanked by 40- to 60-degree slopes. The south-facing slopes on the north side of the inlet are dry and barren with minimal shrubs and grass cover. An occasional tree dots the landscape. The north-facing slopes to the south more trees individually and in dense stands. The soil is light in color strewn with dark lava rock. Textures are smooth water surface and course slopes. Seasonal variation includes the inlet being reduced to a creek channel with exposed silted bottom as the reservoir water level drops. This creates a “bathtub ring” on the steeper valley slopes. Activities in this area include driving along the road, boating, and fishing. This zone is altered by the road and bridge. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.



Figure 16. KOP No. 8 (Lime Creek Bridge looking west)



Figure 17. KOP No. 8 (Lime Creek Bridge looking east)

The *middle ground zone* is Class B and primitive. The *middle ground zone* is a narrow view of valley slopes and mountains framed by the *foreground zone* valley walls. Vegetation is sparse and consists primarily of shrubs and grasses dotted with trees and tree stands. Barren light to tan patches of soil are visible. Rocky scree is visible to the east. Colors are predominately greens, grays, and tans. Textures are soft vegetation to hard rocks. Seasonal variation includes the “bathtub ring” to the west as the reservoir water level drops. No development is visible to the east. The road is visible to the west. The landscape is dominant. The area is viewed from a primary travel way with moderate use and is determined to be concern level 2.

The *background zone* is not visible from KOP No. 8.

Table 9. KOP No. 8 Scenic Assessment

Distance Zone	Scenic Attractiveness	Recreational Opportunity Setting	Scenic Integrity	Concern Level	USFS Management VQO
Foreground	Class B - Typical	Roaded Natural	Moderate	2	R - Retention
Middle Ground	Class B - Typical	Roaded Natural	Moderate	2	PR – Partial Retention
Background	NA		NA	NA	NA

Page intentionally left blank.

3. Environmental Consequences

3.1 Methods for Evaluating Impacts

The impacts assessment is derived from magnitude of the change from the baseline of the scenic attractiveness and the scenic integrity for the distance zones from the KOPs.

The direct and indirect project area for the analysis of aesthetic resources is the visible landscape within the project area. The KOPs are analyzed to determine the short- and long-term impacts to scenery within the project area. For the analysis of direct short-term impacts, any area where new project features would be constructed, or ground disturbance would occur, would have direct short-term visual impacts. The KOPs that overlap this area represent viewpoints that would be impacted by short-term surface disturbance from construction activities. For analysis of direct long-term impacts, the permanent features from the proposed action were used to assess long-term impacts, as well as changes to forest vegetation and water levels. The cumulative effects analysis area includes the project areas for each alternative and areas where the cumulative project scenarios would occur that may be seen from the reservoir.

The degree of effect depends on both the magnitude of change to the visual resource and the potential viewer response to and concern for those changes. The levels of effect are identified as high, moderate, low, and no effect.

- **High Level of Effect (H)**—Assigned in situations in which operations, buildings, or other structures would be highly visible to a large number of viewers and would impact the visual landscape setting negatively by reducing the scenic attractiveness from Class A to Class B (see Section 2.3.1). Mitigation measures may or may not provide benefit to this level of impact. This would be considered significant.
- **Moderate Level of Effect (M)**—Assigned in situations in which the operations, buildings, or other structures could be visible to high numbers of viewers by reducing the scenic integrity rating from very high to moderate or high to low. Moderate impacts may be generally consistent with adjacent land uses and some mitigation may be required to minimize impacts to sensitive viewers.
- **Low Level of Effect (L)**—Assigned in situations in which the proposed operations, buildings, or other structures would be minimally visible to a low or moderate number of viewers. The scenic attractiveness would not be lowered, and the integrity rating would not be lowered more than one level. Impacts would also be low (minor) if distance and/or visual compatibility with other existing land uses make impacts difficult to perceive.
- **No Effect**—Assigned in situations in which the proposed operations, buildings, or other structures would not be visible.

The identification of impacts as described in the bullets above, includes evaluating cumulative effects. The cumulative effects analysis is based on identifying impacts that arise through interaction of the proposed project with other past, present, and foreseeable future projects interconnected to the proposed project in space or time.

3.1.1 Assumptions

The following assumptions were used in analyzing impacts on aesthetic resources.

- The viewshed is defined as the surface area visible from a particular location (e.g., a highway pullout, campground, or lake surface) or sequence of locations (e.g., along a highway or trail).
- The geographic focus of the viewshed analysis for the alternatives is the dam, Anderson Ranch Reservoir, and the shoreline up to 1 mile from water's edge, and immediately downstream of the dam (up to 1 mile). Implementing Alternatives B or C would have no measurable effect on aesthetic values and visual resources beyond this area.
- The viewshed analysis will assess potential change from KOPs.
- Short-term effects are the effects during construction and may include construction lighting if construction occurs at night.
- Short-term effects in some areas would occur until the reclamation vegetation cover blends in with adjacent land areas.
- The landscape in the visual quality analysis area is predominantly rural.

3.1.2 Impact Indicators and Significance Criteria

Impacts and significance criteria to aesthetics are indicated by effects on the following.

Impact Indicator	Significance Criteria
Conflict with existing scenic resource management goals, guidelines, and policies	Would there be a substantial adverse effect on a Class A or unique scenic vista, including degradation or obstruction?
Irreversible changes	<p>Would there be substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings?</p> <p>Would there be substantial degradation of the existing scenic attractiveness or integrity of the project area and its surroundings?</p>
Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics, cultural features, and man-made structures	Have an adverse effect on Wild and Scenic eligibility status, or any other protective legislation, for rivers or streams in the project area?

Impact Indicator	Significance Criteria
Duration of change	Would the alternative result in a loss of scenic value for either visitors and/or residents?

3.2 Direct, Indirect, and Cumulative Impacts

3.2.1 Alternative A – No Action

Visual resources are important to the visitor’s enjoyment of Anderson Ranch Reservoir, and conserving visual resources is an important component of federal management activities for the area around the reservoir. As described previously, views around the reservoir consist of steep and gentle sloping valley sides, dense to sparse vegetation, and distance settings with little or no evidence of man to rural settings with recreation facilities or agricultural establishments.

Effects on visual resources include the calcium carbonate “bathtub ring” surrounding the reservoir and associated changes in landscape form, color, textures, vegetation, and soil. Calcium carbonate deposits form at the water line and are typically visible when lake elevations fall below full pool, creating a “bathtub ring” effect. They are generally lighter in color than the reservoir walls without calcium carbonate deposits. This creates visual contrast that may result in a change to the aesthetics noticeable to visitors. The calcium carbonate deposits around the reservoir would be exposed as reservoir water levels rise and fall (See figure 18).



Figure 18. Example of bathtub ring

Under the No-Action Alternative, there would be no new facility construction or raising the dam. Seasonal water management operations would continue resulting in low water levels during the fall and winter months, and water levels may change from year to year as more or less precipitation occurs. The low water levels reveal a “bathtub ring” along the steeper shorelines and expose the lake bottom in flat areas toward the northern end of the reservoir (see figures 19, 20 and 21). Therefore, there would be changes to the existing impacts on the current visual landscape or on views from any of the KOPs.



Figure 19. Low water looking toward Pine Campground, October 2018

Figure 20. Low water at Lime Creek Bridge, October 2018



Figure 21. Low water at Curlew Campground, October 2018



The visual environment would remain like its current state, offering rural and primitive mountainous vistas with seasonal fluctuating water levels. Therefore, the impacts on the aesthetic environment would not be significant under the No Action Alternative. Table 10 provides an analysis of the significance of the impacts based on the indicators for Alternative A.

Table 10. Alternative A – No-Action – significance summary

Impact Indicator	Significance Criteria	Alternative A – No-Action	Mitigation
Conflict with existing scenic resource management goals, guidelines, and policies Irreversible changes Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics, cultural features, and man-made structures	Would there be a substantial adverse effect on a Class A or unique scenic vista, including degradation or obstruction?	No. All views and vistas would remain as they currently exist.	No significant impacts requiring mitigation.
Duration of change	Would there be substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings?	No. All views and vistas would remain as they currently exist.	No significant impacts requiring mitigation.
	Would there be substantial degradation of the existing scenic attractiveness or integrity of the project area and its surroundings?	No. All views and vistas would remain as they currently exist.	No significant impacts requiring mitigation.
	Have an adverse effect on Wild and Scenic eligibility status, or any other protective legislation, for rivers or streams in the project area?	No. All views and vistas would remain as they currently exist.	No significant impacts requiring mitigation.
	Would the alternative result in a loss of scenic value for either visitors and/or residents?	No. All views and vistas would remain as they currently exist.	

3.2.2 Alternative B – Anderson Ranch Dam Six-Foot Raise

The proposed 6-foot dam raise would inundate an estimated 140 acres of additional land around the reservoir above the current full pool elevation of 4,196 feet. The effects during and after construction are described below for each of the KOPs.

3.2.2.1 Direct and Indirect Impacts

KOP No. 1 Below Dam on South Fork of Boise River

Short Term

The KOP No. 1 area would be used as a borrow area for basalt talus. Proposed borrow activities in this area would cause surface disturbance in the form of soil, talus, and vegetation removal. Removing soils, rock, and vegetation would alter colors, form, line, and textures of the immediate area. It is anticipated that people that might be recreating near this area would relocate to another reach of the river with less construction activity and noise. Also, vehicular activities may increase with road closures and detours. Heavy equipment used to excavate and transport material to the dam location would add additional visual intrusion on KOP No. 1. KOP No. 1 would be affected by an increase in traffic until construction activities are completed and former traffic patterns are restored. There would be low to moderate, direct, adverse impacts on the foreground KOP No. 1 during construction. The greatest change would occur while the area is being used for a borrow pit, and the effects would taper off after excavation activities cease.

Excavation activities and construction activities at the dam would create dust in the air that could obscure *foreground zone* and *middle ground zone* views. Night construction activities would add light, thereby diminishing views of the dark night skies. These indirect, adverse impacts to the *foreground zone* and *middle ground zone* would be low and occur for the duration of the excavation and dam construction activities.

Long Term

After construction activities cease at the dam, the borrow area would be revegetated with native plants to reduce the appearance of the recent excavation. Within a few years, evidence of the activities would diminish to low (minor) or with little permanent changes to the vegetation. Indirect impacts caused by fugitive dust and lighting would cease with the conclusion of construction activities.

Once the landscape revegetates, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

KOP No. 2 On Dam

Short Term

KOP No. 2 is at the heart of the construction activities. Activities in this area include the dam raise, spillway modifications, and constructing a temporary cofferdam. Construction would

involve heavy equipment and transportation of construction materials to this location, creating a visual intrusion on KOP No. 2 for those that might recreate near or pass by the area along the roadway or on the reservoir. Removing soils, rock, and vegetation near the dam would alter colors, form, line, and textures of the immediate area. It is anticipated that people that usually recreate here would relocate to another area of the reservoir with less construction activity and noise. However, the activities could also create curiosity and lure some boaters to the area during construction. Those wishing to view the scenery from the dam would not have access during construction due to the dam road closure.

There would be moderate, direct, adverse impacts to the foreground KOP No. 2 during construction. The effects would taper off as construction activities near completion. Short-term, indirect impacts would include dust from borrow area excavations to the west and south of the dam. This could obscure *middle ground zone* and *background zone* views in those directions. Low effects would be expected to the east and north *middle ground zone* and *background zone* views. Night construction activities at the dam and borrow area would increase artificial lighting and diminish views of the night skies within the *foreground zone*, *middle ground zone*, and *background zone*.

Long Term

After construction activities cease, normal water management operations would resume with water levels lowering during the fall and winter months revealing the “bathtub ring” along the shoreline. The ring may increase in height; however, at a distance, it would not result in a noticeable change, and would be like the existing conditions. Therefore, the long-term effects of the dam raise would diminish to a very low or no effect to the viewshed. Indirect impacts caused by fugitive dust and lighting would cease with the conclusion of construction activities.

Once the construction is completed, the overall scenic integrity and USFS management VQO would be restored to the pre-construction setting.

KOP No. 3 View of Dam from Southwest

Short Term

KOP No. 3 is a view of the dam from a little over ½ mile away. The foreground is minimal and would not be affected by construction activities. There would be moderate to high, direct, adverse impacts to this unique middle ground vista during construction from large construction equipment, removing and adding dam structures, and altering colors, form, line, and textures. However, it is anticipated that viewers would decrease due to road detours and the amount of construction traffic deterring stopping along this route. The effects would taper off after construction activities near completion. Short-term, indirect impacts would include dust from the dam construction that would obscure *middle ground zone* and *background zone* views. Night construction activities at the dam would increase artificial lighting, thereby diminishing views of the night skies within the middle ground and background zones.

Long Term

After construction activities cease, normal water management operations would resume with water levels lowering during the fall and winter months revealing the “bathtub ring” along the shoreline. The ring may increase in height; however, at a distance, it would not result in a noticeable change to the *middle ground zone* or *background zone* views of the reservoir and would be like existing conditions. At this distance, it is anticipated that the increased height of the dam and changes in structures would be minimally perceived by most viewers. Therefore, the long-term effects of the dam raise would diminish to very low to no effect to the viewshed. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

Once the construction is completed, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

KOP No. 4 HD 120, East of Dam

Short Term

KOP No. 4 is approximately ¼ mile north and east of the dam along HD 120. The *foreground zone* would not be directly affected by construction activities. However, those that might recreate near or pass by the area along the roadway or on the reservoir would notice the visual intrusions of heavy equipment, construction activities, and transportation of materials west of the dam. This would result in low to moderate, direct, adverse impacts to the *middle ground zone* toward the dam (west). It is anticipated that people that usually recreate in this area would relocate to another area of the reservoir with less construction activity and noise. However, the activities could also create curiosity and lure some boaters. No impacts are expected to the *foreground zone*, the *middle ground zone* to the east, or the *background zone*. The effects to the west would taper off as construction activities near completion. Short-term, indirect impacts would include dust and night lighting from the dam construction that would obscure *foreground zone*, *middle ground zone*, and *background zone* views.

Long Term

After construction activities cease, normal water management operations would resume with water levels lowering during the fall and winter months revealing the “bathtub ring” along the shoreline. The ring may increase in height; however, at a distance, it would not result in a noticeable change to the *foreground zone*, *middle ground zone*, or *background zone* views of the reservoir and would be like existing conditions. The roadway is not expected to be impacted in this area. From this location, it is anticipated that the changes to the view of the dam would not be noticed by most viewers. Therefore, the long-term effects of the dam raise would diminish to a very low to no effect to the viewshed. Indirect impacts caused by fugitive dust and lighting would cease when construction activities end.

Once the construction is completed, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

KOP No. 5 Fall Creek Resort and Marina

Short Term

KOP No. 5 is within a Fall Creek inlet and there would be no direct views of the construction activities. Therefore, there would be no adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* at KOP No. 5. Dust and night construction light would have a minimal effect on obscuring the *foreground zone* and *middle ground zone* views. Therefore, there would be no to very low, short-term, indirect impacts from dam construction.

Long Term

After construction is complete, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 6 vertical feet during the summer months. This would cause loss of vegetation and soil. Removing soils and vegetation would alter colors, form, line, and textures of the immediate area. The loss of trees would open new views from and of County Road 120 currently screened by the vegetation, thereby allowing the road to become more visible on the landscape. Portions of the parking lots and boat launch areas could also be flooded. The construction of a new boat ramp, installation of riprap, and relocation and installation of the new campground would modernize the facilities, although not change the overall visual landscape of the campground.

During the fall and winter months when the water levels recede, there would be a heightened “bathtub ring” along the steeper shoreline and greater exposed area of the shallower reservoir bottom lands. The *foreground zone* and *middle ground zone* aesthetic environment would change from the additional inundation area. However, the area already has man-made structures, infrastructure, and seasonal changes in water levels, so the viewers’ perceptions and experiences of the area would be like existing conditions. In a few areas, the roadway would be slightly more dominant on the landscape. Long-term effects of this alternative would be adverse and low. Indirect impacts caused by fugitive dust and night lighting would end when construction activities end.

After the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting.

KOP No. 6 Pine Campground

Short Term

KOP No. 6 is at the Pine Campground. Lester Creek Road (National Forest Service [NFS] Road 128) immediately south of the airstrip would be raised. Portions of the campground and the boat ramp would be relocated to higher ground. Construction associated with these activities would be visible to those recreating nearby. Therefore, there would be direct adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* at KOP No. 6. There would also be short-term, indirect impacts from construction dust. It is not anticipated that night construction activities would occur at this location. Night construction lighting would be perceptible in the southwestern sky (at the dam) but would not diminish

overall night sky viewing or *foreground zone*, *middle ground zone*, and *background zone* views. Therefore, there would be moderate to low, short-term, indirect impacts.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 6 vertical feet during the summer months. This would cause loss of vegetation and soil. Removing soils and vegetation would alter colors, form, line, and textures of the immediate area. The relocation and installation of new campground improvements and boat ramp would modernize the facilities, although not change the overall visual landscape of the campground.

During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. After these areas have stabilized, there would be a change to the *foreground zone* and *middle ground zone* aesthetic environment. However, this area already has man-made structures, infrastructure, and seasonal water level changes, so the viewers’ perceptions and experiences of the area would be like existing conditions. Long-term effects would be adverse and low. Background views would not be affected. Night construction lighting would end when construction ends.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting.

KOP No. 7 Curlew Creek Campground

Short Term

KOP No. 7 is at the Curlew Campground. Pine-Featherville Road (NFS Road 61) north of the campground would be raised. Portions of the campground and the boat ramp would be relocated to higher ground. Construction associated with these activities would be visible to those recreating nearby. Therefore, there would be direct adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* at KOP No. 7. There would also be short-term, indirect impacts from construction dust. It is not anticipated that night construction activities would occur at this location. Night construction lighting would be perceptible in the southwestern sky (at the dam) but would not diminish overall night sky viewing or *foreground zone*, *middle ground zone*, and *background zone* views. Therefore, there would be moderate to low, short-term, indirect impacts from dam construction.

Long Term

After construction is complete, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 6 vertical feet during the summer months. This would cause loss of vegetation and soil. Removing soils and vegetation would alter colors, form, line, and textures of the immediate area. The loss of trees would open new views from the road and of the road currently screened by the vegetation, thereby allowing the campground and road to become more visible on the landscape. The

relocation and installation of new campground improvements and boat ramp would modernize the facilities, although not change the overall visual landscape of the campground.

During the fall and winter months a larger area of reservoir bottom lands in shallower, flatter areas of the *foreground zone* may be exposed to the north end of the reservoir due to additional shallow lands being inundated. This may occur if additional water is released, particularly during dry years. In the *middle ground zone*, there could be a heightened “bathtub ring” along the steeper shoreline across the reservoir. However, at this distance, the viewers’ perceptions and experiences of the area would be like existing conditions. Long-term effects would be adverse and low. Night construction lighting would end when construction ends.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting.

KOP No. 8 Lime Creek Bridge

Short Term

KOP No. 8 is within the Lime Creek inlet. The Lime Creek Bridge would be raised to accommodate the higher pool. During reconstruction of the bridge, traffic would be diverted. It is anticipated that boater and recreators would avoid the area due to the construction and noise. Therefore, there would be no direct adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* at KOP No. 8 during this time. After constructing the bridge and before completing the dam, night construction lighting would be perceptible in the southwestern sky (toward the dam) but would not diminish overall night sky viewing or *foreground zone* and *middle ground zone* views. Construction dust from the dam activities would not be perceptible. Therefore, there short-term effects on the aesthetic environment are not expected.

Long Term

After construction is complete, seasonal water management operations would resume. Immediately after construction is complete, water levels would rise an additional 6 vertical feet during the summer months. This would cause loss of vegetation and soil along the inundated shoreline and along the creek. Removing soils, rock, and vegetation would alter colors, form, line, and textures of the immediate area. The loss of trees would open new views from the road and of the road currently screened by the vegetation, thereby allowing the road to become more visible on the landscape. Under this alternative, the boat launch would be flooded.

There could be a heightened “bathtub ring” along the steeper shoreline and greater exposed area of the shallower reservoir bottom lands due to additional shallow lands being inundated. This may occur if additional water is released, particularly during dry years. After these areas have stabilized and downed trees have been removed, there would be changes to the *foreground zone* and *middle ground zone* aesthetic environment. However, the area already has man-made infrastructure and water management operations, so the viewers’ perceptions

and experiences of the area would be like existing conditions. The roadway would be slightly more dominant on the landscape. Long-term effects would be adverse and low. Night construction lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting.

Staging Areas, Culverts, and Other Roadways and Recreational Facilities

Short Term

Additional areas would be affected by seasonal raised water levels, including culverts, additional road sections, and portions of other recreational facilities. Construction associated with these activities would be like those described above. Effects would be visible to those recreating nearby. Therefore, there would be direct adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* in these areas. There would also be short-term, indirect impacts from construction dust. It is not anticipated that night construction activities would occur at these locations. Night construction lighting would be perceptible in the southwestern sky (at the dam) but would not diminish overall night sky viewing or *foreground zone*, *middle ground zone*, and *background zone* views. Therefore, there would be moderate to low, short-term, indirect impacts from dam construction.

Long Term

As described above for the KOPs, after construction is complete, seasonal water management operations would resume. Immediately after construction is complete, water levels would rise an additional 6 vertical feet during the summer months. This would cause loss of vegetation and soil along the inundated shoreline and along the creek. Removing soils, rock, and vegetation would alter colors, form, line, and textures of the immediate area.

During the fall and winter months when the water levels recede, there would be a heightened “bathtub ring” along the steeper shoreline and greater exposed area of more shallow reservoir bottom lands. After these areas have stabilized and downed trees have been removed, there would be change to the *foreground zone* and *middle ground zone* aesthetic environment. Long-term effects would be adverse and low. Night construction lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting.

Other Borrow and Contractor Use Areas

Short Term

Other contractor use and borrow areas that are visible to visitors and travelers would have short-term impacts similar to those described for KOP No. 1. There would be low to moderate, direct, adverse impacts to the *foreground zone* in these areas during construction. The greatest change would occur while the area is being used for a borrow pit, and the effects would taper off after excavation activities cease.

Excavation activities at this site and construction activities at the dam would create dust in the air that could obscure *foreground zone* and *middle ground zone* views. Night construction activities would add light, thereby diminishing views of the dark night skies. These indirect, adverse impacts to the *foreground zone* and *middle ground zone* would be low and occur for the duration of the excavation and dam construction activities.

Long Term

After construction activities cease, the area would be revegetated with native plants to reduce the appearance of the recent excavation. Within a few years, evidence of the activities would diminish to a very low to no visual effect with little or no permanent changes to the vegetation. Indirect impacts caused by fugitive dust and lighting would end when construction activities end.

Once the landscape revegetates, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

3.2.3 Summary and Significance

Short-term, direct and indirect, adverse impacts would occur to the aesthetic environment during dam construction. These impacts would be greatest at the dam and borrow area and would be greatly reduced with distance from the construction areas. After construction is complete, the shoreline changes to colors, form, line, and textures within the high-water inundation area (up to an additional 6 vertical feet) would be visible at lower water levels. However, the magnitude of change is minimal and only during the fall and winter months when the water level is at its lowest. The overall characteristics of the aesthetic environment would not be degraded and the difference in visual impacts from the No-Action Alternative would be negligible. The calcium carbonate deposits creating the effect of a “bathtub ring” produce a visual contrast regardless of their height and size. The ring makes up only a portion of the views in the area. The visual environment would remain like its current state, offering rural and primitive mountainous vistas with seasonal fluctuating water levels. Therefore, the impacts on the aesthetic environmental would not be significant under this alternative.

Table 11 provides an analysis of the significance of the impacts based on the indicators for Alternative B.

Table 11. Alternative B – Anderson Ranch Dam Six-Foot Raise – significance summary

Impact Indicator	Significance Criteria	Alternative B	Mitigation
Conflict with existing scenic resource management goals, guidelines, and policies Irreversible changes	Would there be a substantial adverse effect on a Class A or unique scenic vista, including degradation or obstruction?	No. There are no Class A vistas, the unique view of the dam would have minor changes after construction. However, change would not be very noticeable due to distance.	Project design features minimize impact and eliminate the need for actual mitigation measures.
Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics, cultural features, and man-made structures Duration of change	Would there be substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings?	No. Short-term, direct and indirect, adverse impacts would occur during construction. Impacts would be greatest at the dam and borrow area and would be greatly reduced with distance from the construction areas. After construction is complete, the shoreline would have greater changes to colors, form, line and textures within the high-water inundation area; however, the magnitude of change is minimal and only during the fall and winter months. The overall characteristics of the aesthetic environment would not be degraded. Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction settings.	No significant impacts requiring mitigation.
	Would there be substantial degraded existing scenic attractiveness or integrity of the project area site and its surroundings.	No. As described above, short-term, direct and indirect, adverse impacts would occur during construction. After construction, the overall characteristics would not be degraded and the difference in visual impacts from the No Action alternative would be negligible.	No significant impacts requiring mitigation.

Impact Indicator	Significance Criteria	Alternative B	Mitigation
		Once construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting	
	Have an adverse effect on Wild and Scenic River eligibility status, or any other protective legislation, for rivers or streams in the project area?	<p>No. Sections of the South Fork Boise River are eligible to be classified as Recreational, Wild and Scenic.</p> <p>Recreationalists may be temporarily displaced during construction; however, there would be no long-term effects to these outstanding values.</p> <p>Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQOs would be like pre-construction setting</p>	No significant impacts requiring mitigation.
<p>Conflict with existing scenic resource management goals, guidelines, and policies</p> <p>Irreversible changes</p> <p>Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics, cultural features, and man-made structures</p> <p>Duration of change</p>	Would the proposed alternative result in a loss of scenic value for either visitors and/or residents?	<p>No short-term, direct and indirect, adverse impacts would occur during construction.</p> <p>After the construction, the overall characteristics would not be degraded and the difference in visual impacts from the No-Action Alternative would be negligible.</p> <p>Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting</p>	

3.3 Alternative C – Anderson Ranch Dam Three-Foot Raise

Alternative C proposes to raise Anderson Ranch Dam three feet from the present elevation of 4196 feet to 4199 feet, allowing for the ability to capture and store approximately 14,400 additional AF of water. The proposed 3-foot dam raise would inundate an estimated 72 acres

of additional land around the reservoir above the current full pool elevation of 4196 feet. The effects during and after construction are described below for each of the KOPs.

3.3.1 Direct and Indirect Impacts

KOP No. 1 Below Dam on South Fork of Boise River

Short Term

Short term impacts to KOP No. 1 would be the same as those described for Alternative B.

Long Term

Long term impacts to KOP No. 1 would be the same as those described for Alternative B.

Once the landscape revegetates, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

KOP No. 2 On Dam

Short Term

Short term impacts to KOP No. 2 would be the same as those described for Alternative B.

Long Term

After construction activities cease, normal water management operations would resume with water levels lowering during the fall and winter months revealing the “bathtub ring” along the shoreline. The ring would slightly increase in height when compared to the No Action Alternative; however, it would be shorter in height than Alternative B. At a distance, it would not result in a noticeable change over the existing conditions. Therefore, the long-term effects of the dam raise would diminish to a very low or no effect to the viewshed. Indirect impacts caused by fugitive dust and lighting would cease with the conclusion of construction activities.

Once the construction is completed, the overall scenic integrity and USFS management VQO would be restored to the pre-construction setting.

KOP No. 3 View of Dam from Southwest

Short Term]

Short term impacts to KOP No. 3 would be the same as those described for Alternative B.

Long Term

After construction activities cease, normal water management operations would resume with water levels lowering during the fall and winter months revealing the “bathtub ring” along the shoreline. The ring would slightly increase in height when compared to the No Action Alternative; however, the ring would be shorter in height than Alternative B. At a distance, there would not be a noticeable change to the *middle ground zone* or *background zone* views of the reservoir and the views would be similar to existing conditions. From this viewpoint, it is anticipated that the increased height of the dam and changes in dam structures would not

be perceived by viewers. Therefore, the long-term effects of the dam raise would diminish to very low to no effect on the viewshed. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

Once the construction is completed, the overall scenic integrity and USFS management VQO would be restored to pre-construction setting.

KOP No. 4 HD 120, East of Dam

Short Term

Short term impacts to KOP No. 4 would be the same as those described for Alternative B.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

KOP No. 5 Fall Creek Resort and Marina

Short Term

Short term impacts to KOP No. 5 would be the same as those described for Alternative B.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

KOP No. 6 Pine Campground

Short Term

Short term impacts to KOP No. 6 would be the same as those described for Alternative B.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

KOP No. 7 Curlew Creek Campground

Short Term

Short term impacts to KOP No. 7 would be the same as those described for Alternative B.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

KOP No. 8 Lime Creek Bridge

Short Term

The Lime Creek Bridge would not be raised under Alternative C, therefore, there would be no direct adverse impacts on the visual quality of the *foreground zone* and *middle ground zone* at KOP No. 8 during this time. During dam construction, night construction lighting would be perceptible in the southwestern sky (toward the dam) but would not diminish overall night sky viewing or *foreground zone* and *middle ground zone* views. Construction

dust from the dam activities would not be perceptible. Therefore, short-term effects on the aesthetic environment are not expected.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

Staging Areas, Culverts, and Other Roadways and Recreational Facilities

Short Term

Other areas would be affected by seasonal raised water levels, including culverts, additional road sections, and portions of other recreational facilities. Short term impacts to these areas would be the same as those described for Alternative B.

Long Term

After construction is completed, seasonal water management operations would resume. As the seasonal water levels rise, the shoreline would be inundated up to an additional 3 vertical feet during the summer months. During the fall and winter months when the water recedes, there would be a heightened “bathtub ring” along the steeper shoreline and at the greater exposed area of reservoir bottom lands in shallower, flatter areas. The impacts would be similar to those described under Alternative B; however, the magnitude of the change would be about half that of Alternative B. Long-term effects would be adverse and low. Indirect impacts caused by fugitive dust and increased night lighting would end when construction activities end.

After construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be similar to the pre-construction setting.

Other Borrow and Contractor Use Areas

Short Term

Borrow and contractor use areas that are visible to visitors and travelers would have short-term impacts the same as those described for Alternative B.

Long Term

After construction activities cease, the area would be revegetated with native plants to reduce the appearance of the recent excavation. Within a few years, the long-term impacts would be similar to those described for Alternative B.

Once the landscape revegetates, the overall scenic integrity and USFS management VQO would be restored to the pre-construction setting.

3.3.2 Summary and Significance

Short-term, direct and indirect, adverse impacts would occur to the aesthetic environment during dam construction. These impacts would be greatest at the dam and borrow area and would be greatly reduced with distance from the construction areas. After construction is complete, the shoreline changes to colors, form, line, and textures within the high-water inundation area (up to an additional 3 vertical feet over the No Action Alternative, and 3 vertical feet less than Alternative B) would be visible at lower water levels. However, the magnitude of change is minimal and the change would only occur during the fall and winter months when the water level is at its lowest. The overall characteristics of the aesthetic environment would not be degraded and the difference in visual impacts from the No-Action Alternative would be negligible. The calcium carbonate deposits creating the effect of a “bathtub ring” produce a visual contrast regardless of their height and size. The ring makes up only a portion of the overall views in the project area. The visual environment would remain similar to its current state, offering rural and primitive mountainous vistas with seasonal fluctuating water levels. Therefore, the impacts on the aesthetic environmental would not be significant under this alternative.

Table 12 provides an analysis of the significance of the impacts based on the indicators for Alternative C.

Table 12. Alternative C – Anderson Ranch Dam Three-Foot Raise – significance summary

Impact Indicator	Significance Criteria	Alternative C	Mitigation
Conflict with existing scenic resource management goals, guidelines, and policies Irreversible changes	Would there be a substantial adverse effect on a Class A or unique scenic vista, including degradation or obstruction?	No. There are no Class A vistas, the unique view of the dam would have minor changes after construction. However, change would not be very noticeable due to distance.	Project design features minimize impact and eliminate the need for actual mitigation measures.
Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics,	Would there be substantial damage to scenic resources, including, but not limited to, trees, rock	No. Short-term, direct and indirect, adverse impacts would occur during construction.	No significant impacts requiring mitigation.

Impact Indicator	Significance Criteria	Alternative C	Mitigation
<p>cultural features, and man-made structures</p> <p>Duration of change</p>	<p>outcroppings, and historic buildings?</p>	<p>Impacts would be greatest at the dam and borrow area and would be greatly reduced with distance from the construction areas.</p> <p>After construction is complete, the shoreline would have greater changes to colors, form, line and textures within the high-water inundation area; however, the magnitude of change is minimal and only during the fall and winter months. The overall characteristics of the aesthetic environment would not be degraded.</p> <p>Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction settings.</p>	
	<p>Would there be substantial degraded existing scenic attractiveness or integrity of the project area site and its surroundings,</p>	<p>No. As described above, short-term, direct and indirect, adverse impacts would occur during construction.</p> <p>After construction, the overall characteristics would not be degraded and the difference in visual impacts from the No Action alternative would be negligible.</p> <p>Once construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management</p>	<p>No significant impacts requiring mitigation.</p>

Impact Indicator	Significance Criteria	Alternative C	Mitigation
		VQO would be like pre-construction setting	
	Have an adverse effect on Wild and Scenic River eligibility status, or any other protective legislation, for rivers or streams in the project area?	<p>No. Sections of the South Fork Boise River are eligible to be classified as Recreational, Wild and Scenic.</p> <p>Recreationalists may be temporarily displaced during construction; however, there would be no long-term effects to these outstanding values.</p> <p>Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQOs would be like pre-construction setting</p>	No significant impacts requiring mitigation.
<p>Conflict with existing scenic resource management goals, guidelines, and policies</p> <p>Irreversible changes</p> <p>Change in size, area and type of landform, vegetation, vegetative patterns and density, water characteristics, cultural features, and man-made structures</p> <p>Duration of change</p>	Would the proposed alternative result in a loss of scenic value for either visitors and/or residents?	<p>No short-term, direct and indirect, adverse impacts would occur during construction.</p> <p>After the construction, the overall characteristics would not be degraded and the difference in visual impacts from the No-Action Alternative would be negligible.</p> <p>Once the construction is completed and the vegetation stabilizes, the overall scenic integrity and USFS management VQO would be like pre-construction setting</p>	

3.3.3 Cumulative Impacts

Cumulative effects are analyzed for 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 replacement and the Anderson Ranch Dam crest raise for security enhancement. Reclamation has also identified two potential future actions 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 Pine Bridge replacement resulted in one bridge being replaced with another bridge in the same location, and therefore would not have changed the overall aesthetics of the landscape. The increase in height of the dam crest by four feet would be visible only from the KOPs 2, 3 and 4. From KOPs 3 and 4, the change would be barely visible due to the distance. From KOP 2, the addition of more concrete and rail would not alter the overall look of the dam, nor would it effect the views from the dam. Therefore, the berm would not have changed the overall aesthetics of the landscape. These past projects would not contribute to cumulative effects.

The Cat Creek Energy project proposes an energy and water storage renewable power station; a 100,000-acre-foot reservoir created near the mouth of Cat Creek above Anderson Ranch Reservoir; a pipeline from Anderson Ranch reservoir to Cat Creek reservoir; and wind and solar energy equipment. Although the CCE project would have substantial impacts to the aesthetic environment in areas outside of Anderson Ranch Reservoir project area, only the proposal Cat Creek proposed pipeline would affect the Anderson Ranch Reservoir. The Cat Creek proposed pipeline involves periodically pumping water out of Anderson Ranch Reservoir. This could result in increased daily fluctuations in the reservoir water levels. Due to the terrain, the additional dam, power station and solar generation equipment would not be visible from Anderson Ranch Reservoir. However, the pipeline would likely be visible where it ties into Anderson Ranch Reservoir. The wind generators would likely be sited on the ridge tops and have lights for nighttime illumination. The addition of the pipeline would add man-made infrastructure on the reservoir. The wind generators would add additional man-made structures into the distant views and night sky. However, the overall characteristics of the aesthetic environment would be like the current fluctuating state and the scenic integrity would not be noticeably degraded in the immediate area of the reservoir. Views would remain consistent with the rural nature of the area.

The South Fork Boise River Diversion Project is a pipeline and pumping station project proposed to be located on the far southeast side of the reservoir toward the dam. A pipeline would carry water to Elmore County, approximately 28 miles to the southwest of the

reservoir. Due to the topography, the pumping station would likely not be visible from Anderson Ranch Reservoir; however, the pipeline would be visible where it ties into Anderson Ranch Reservoir. The aquifer recharge project involves periodically pumping water out of Anderson Ranch Reservoir, however, only in spring and in years when there is excess water to be spilled from the reservoir as stipulated in Elmore County's water right associated with this project. This would not result in additional draw down of reservoir water levels as the water would be spilled if not pumped away. The overall characteristics of the aesthetic environment would be like the current fluctuating state and the scenic integrity would not be noticeably degraded in the immediate area of the reservoir. Views would remain consistent with the rural nature of the area.

Cumulatively, the effects of these future projects along with either Alternative B or C may contribute to slight, but insignificant, changes to the aesthetics of the local area.

In addition, if construction for either of these projects overlaps, temporary visual impacts could be greater than for a single project. However, because construction for both Alternative B and C is limited in scale and duration, it is unlikely that there would be significant cumulative impacts to the aesthetic experience.

3.3.4 Mitigation

In summary, since no significant impacts were identified to aesthetics, no mitigation is required. Multiple conservation measures and best management practices are identified and would be implemented as part of the proposed action.

4. References

Bureau of Reclamation, 2012. *Reclamation's NEPA Handbook*. February.

U.S. Department of Agriculture, 1995. *Agriculture Handbook 701 Landscape Aesthetics: A Handbook for Scenery Management*. December.

U.S. Forest Service (USFS), 1982. *Recreation Opportunity Spectrum, User Guide*.

USFS, 2010. *Boise National Forest Amended Forest Plan*. Accessed at:
<https://www.fs.usda.gov/detail/boise/landmanagement/planning/?cid=stelprdb5394192>.

USFS and Bureau of Reclamation. 1987. *Memorandum of Agreement for Administration and Management of Resources, Facilities, Water Surfaces, and Reclamation Zones within the Reservoir Areas of Anderson Ranch, Arrowrock, Deadwood, and Cascade*, Boise, ID.