

RECLAMATION

Managing Water in the West

Supplemental Environmental Assessment

B.F. Sisk Safety of Dams Modification Project

CGB-EA-2021-027
Merced County, California



U.S. Department of the Interior
Interior Region 10 · California-Great Basin
Bureau of Reclamation



— BUREAU OF —
RECLAMATION

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Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

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.

Contents

1. Introduction.....	5
1.1 Project Background and Need	5
1.2 Previous Environmental Documents.....	5
2. Alternatives Including the Proposed Action.....	6
2.1 Project Background.....	6
2.2 No Action Alternative.....	6
2.3 Proposed Modifications to the Project (Proposed Action)	6
3. Affected Environment and Environmental Consequences	25
3.1 Water Quality and Groundwater	25
3.2 Air Quality and Greenhouse Gases.....	27
3.3 Flood Protection.....	29
3.4 Visual Resources.....	30
3.5 Noise & Vibrations	31
3.6 Traffic and Transportation	32
3.7 Hazards and Hazardous Materials	34
3.8 Biological (Terrestrial) Resources	35
3.9 Land Use	37
3.10 Recreation	38
3.11 Cultural Resources	39
3.12 Geology, Seismicity and Soils	40
3.13 Indian Trust Assets	41
3.14 Regional Economics	41
3.15 Environmental Justice.....	42
5. Consultation and Coordination	42
5.1 Agencies and Persons Consulted	42
5.2 Endangered Species Act	42
5.3 National Historic Preservation Act.....	43
6. Conclusion	43
References.....	44
Appendix A. 2019 EIS/R Mitigation Measures.....	45

Acronyms and Abbreviations

2019 EIS/R	B.F. Sisk Safety of Dams Modification Project Final Environmental Impact Statement/Environmental Impact Report
BMPs	Best management practices
CVRWQCB	Central Valley Regional Water Quality Control Board
District	B.F. Sisk Dam/San Luis Reservoir Historic District
DWR	California Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
NPDES	National Pollutant Discharge Elimination Systems
PA	Programmatic Agreement Among the Bureau of Reclamation, Interior Region 10 California-Great Basin; and The California State Historic Preservation Officer Regarding Compliance with Section 106 of the National Historic Preservation Act Pertaining to the Implementation of the Safety of Dams B.F. Sisk Dam Project
Project	B.F. Sisk Safety of Dams Modification Project
Reclamation	Bureau of Reclamation
ROD	Record of Decision, B.F. Sisk Safety of Dams Modification Project
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCDUA	San Luis Creek Day Use Area
State Parks	California Department of Parks and Recreation
SWPPP	Stormwater Pollution Prevention Plan
TACs	Toxic air contaminants
USFWS	United States Fish and Wildlife Service

1. Introduction

1.1 Project Background and Need

B.F. Sisk Dam is a 382-foot-high zoned compacted earthfill embankment in Merced County, California. The dam is over 3 miles long and impounds San Luis Reservoir, which has a total capacity of more than 2 million acre-feet. The dam was built between 1963 and 1967 and provides supplemental irrigation water storage for the federal Central Valley Project and municipal and industrial water for the California State Water Project. The dam is owned by the Bureau of Reclamation (Reclamation) and operated by the California Department of Water Resources (DWR).

Reclamation and DWR are jointly implementing the B.F. Sisk Safety of Dams Modification Project (Project) to address dam stability and safety concerns in the event of seismic activity. The Project will help prevent destabilization of the dam embankment, reduce safety concerns, and maintain water supply deliveries to state and federal water contractors. After execution of the Record of Decision as described below, Reclamation and DWR have identified three proposed modifications to project activities: recreation mitigation activities, additional construction contractor use areas, and additional activities in a construction contractor use area (now Borrow Areas 12 and 14) (together, project modifications or Proposed Action). These proposed modifications will improve the efficiency and effectiveness of Project implementation and mitigate the Project's impacts to recreation.

Reclamation has prepared this Environmental Assessment (EA) to evaluate and disclose the environmental effects of these proposed modifications.

1.2 Previous Environmental Documents

Reclamation and DWR completed the B.F. Sisk Dam Modification Project Final Environmental Impact Statement/ Environmental Impact Report¹ (2019 EIS/R) to jointly comply with the National Environmental Policy Act and the California Environmental Quality Act. After circulating a draft document in April 2019 for public review, the Final EIS/R was released in August 2019. On December 3, 2019, Reclamation executed a Record of Decision (ROD) for the Project based on analysis in the 2019 EIS/R summarizing Reclamation's decision to implement the Crest Raise Alternative.

To review the proposed modifications to the Project, DWR released a Draft Supplemental Environmental Impact Report (Supplemental EIR; SEIR) analyzing the proposed modifications under CEQA on June 15, 2021². Reclamation performed an independent review of the Supplemental EIR and found that the document sufficiently analyzed effects of the Project with respect to resource categories examined. This EA summarizes expected environmental impacts detailed in the Supplemental EIR and provides an additional discussion of potential effects to Indian Trust Assets and environmental justice, as well as compliance with the Endangered Species Act (ESA) and National Historic Preservation Act, as required by Department of the Interior Regulations, Executive Orders, and Reclamation guidelines for preparing environmental documentation.

¹ The 2019 EIS/R is available at: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=34281

² The Supplemental EIR is available at: <https://ceqanet.opr.ca.gov/2009091004/8>

The 2019 EIS/R and the Supplemental EIR are hereby incorporated by reference.

2. Alternatives Including the Proposed Action

2.1 Project Background

To address the potential for dam failure caused by a seismic event, the B.F. Sisk Dam Safety of Dams Modification Project would raise portions of the dam crest (in the south valley section and the north valley section) 12 feet to a new elevation of 566 feet. The Project includes adding embankment material, constructing stability berms and foundation shear keys, and installing downstream crack filters. The seismic crack induced erosion risk would be addressed by installing downstream filters (engineered material layers built into the dam face) across the full width of the dam crest raise on the downstream face of the new embankment material.

Downstream crack filters are built into the dam and consist of layers of different material types. This feature helps restrict the migration of soil materials through cracks mitigating the potential for post seismic cracks to induce internal erosion within the dam embankment.

The Project will also include site preparation activities, material quarry and processing, material stockpiling and staging activities, material transport, and site cleanup, restoration and revegetation activities. Site preparation will include moving or grubbing of vegetation, stripping, clearing, grading, fence and sign installation, construction trailer set-up, implementation of the best management practices for stormwater pollution prevention and other permits, rock crushing facility and containment set-up, and water source establishment. Material quarry and processing will include developing and improving haul roads for access, blasting, excavation, processing, screening, and stockpiling of various type of rock and soil materials within the borrow areas. Heavy equipment, material transport equipment, and a processing plant are expected to be used for these activities. Material will be stockpiled at three designated staging locations and transported to the dam face for use in construction activities. The Project area totals approximately 4,000 acres within the San Luis Reservoir State Recreation Area (SLRSRA), depicted in Figure 1. The site will be revegetated following completion of construction.

Additional detail for most Project activities is included in the 2019 EIS/R. The summary of Project activities here serves to contextualize the proposed modifications analyzed in this EA. All Project components that are not specifically described in this EA have not changed from the description provided in the 2019 EIS/R.

2.2 No Action Alternative

Under the No Action Alternative, Reclamation would complete the B.F. Sisk Safety of Dams Modification Project as described in the 2019 EIS/R and ROD. No modifications to the project description would be made. This alternative serves as a basis of comparison for understanding potential effects to the environment.

2.3 Proposed Modifications to the Project (Proposed Action)

Reclamation and DWR have identified three proposed modifications to project activities: recreation mitigation activities, additional contractor use areas, and additional activities in a

contractor use area (now Borrow Areas 12 and 14). This new work is described in additional detail below; locations are shown in Figure 1³.

2.3.1 Recreation Mitigation Activities

Campground Construction

To mitigate for impacts to recreation opportunities from Project activities, the EIS/R included mitigation measure REC-1: Campsite and Facilities Replacement. Under this mitigation measure, Reclamation and DWR would replace campsites closed due to construction at a 1:1 ratio. Details were not known about the construction of the new campground at the time of the 2019 EIS/EIR, so these activities were not included. Reclamation is now working closely with the facility's managing partner, California Department of Parks and Recreation (State Parks), to design and develop the additional campsites by constructing a new campground. The campground would be located adjacent to the O'Neill Forebay approximately 2-miles north of SR 152, as shown in Figure 1. The construction is anticipated to occur during Phase 1 of the overall Project, from 2021-2024.

Reclamation, DWR, and State Parks would construct a new 36.95-acre campground with 79 campsites. The campground would include 73 tent sites and 6 campsites that are Americans with Disabilities Act accessible. Associated facilities would also be constructed, including: two combination buildings with 4 restrooms and 4 showers, a campfire center, and supporting campground utilities. Construction activities would include site grading and excavation, installation of the associated facilities, and installation of sewer lines, water lines, asphalt roads, picnic tables, and fire rings.

San Luis Creek Day Use Area Improvements

Similarly, to mitigate for impacts to recreational opportunities from Project activities, the Project's EIS/EIR included mitigation measure REC-1: Campsite and Facilities Replacement. Under this mitigation measure, Reclamation and DWR would also work with State Parks to complete facility improvements at the San Luis Creek Day Use Area (SLCDUA). The SLCDUA is located along the western shore of the O'Neill Forebay approximately 1 mile north of SR 152, shown in Figure 1. Details were not known about these facility improvements at the time of the 2019 EIS/EIR, so these activities were not included.

Reclamation and State Parks have now determined the activities to be completed in this area: construction of four separate bathroom facilities, installation of a new fish cleaning station, and construction of an additional lane in the existing boat launch. The construction would occur during Phase 1 of the overall Project, from 2021-2024. Cumulatively, activities would occur over 3.69 acres, within the existing SLCDUA footprint. The activities would be completed in five distinct construction

³ Figure 1 includes two Project areas that were included in the 2019 EIS/R effects analysis, but inadvertently omitted from the Project area figures. The 39.31-acre Medeiros campground would be used for general contractor use and staging activities, and the 2.05-acre dike improvement area will include saddle dike improvement activities, analogous to construction activities on the dam face, and will last approximately one month. These areas are included in the Project area, and effects were included in the 2019 EIS/R.

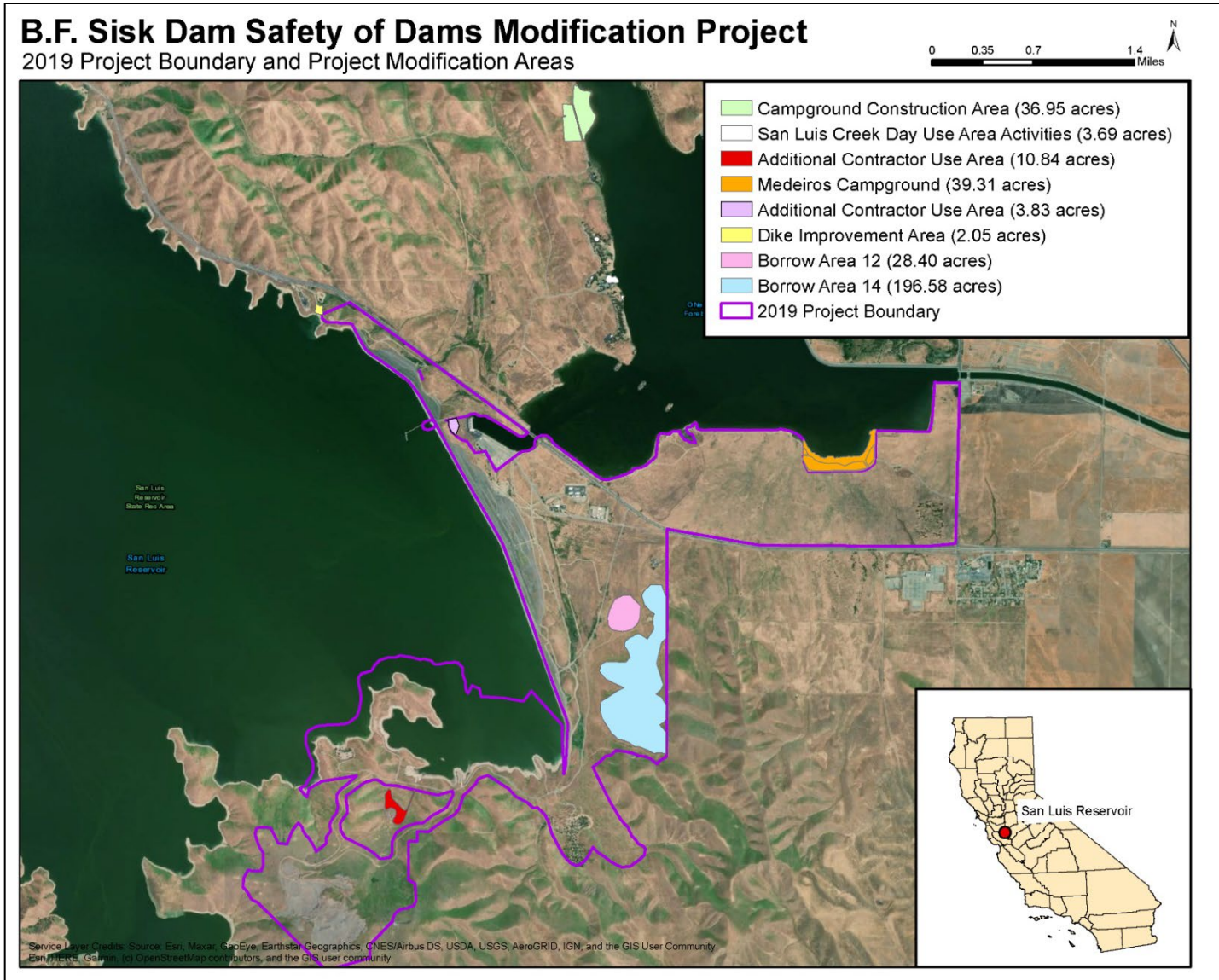


Figure 1. Project Area: 2019 Project Area and 2020 Project Modifications

areas, which range from 0.21 acres to 2.48 acres. Figure 1 shows the locations of activities within the SLCDUA.

2.3.2 Additional Contractor Use Areas

Reclamation and DWR have identified two contractor use areas that were not previously identified within the Project boundary of the 2019 EIS/R. These include one 10.84-acre area between Basalt Hill and the southern edge of San Luis Reservoir and a 3.83-acre area between the B.F. Sisk Dam and the O'Neill Forebay. The area between Basalt Hill and the San Luis Reservoir was utilized for material stockpiling and processing during the original construction of San Luis Dam. During the Project these three areas would be similarly utilized for stockpiling and processing material, during all phases of the Project.

2.3.3 Borrow Areas 12 and 14 (Modifications to Borrow Areas; Additional Activities in Contractor Use Area)

The 2019 EIS/R designates the area east of the dam as a general contractor use area, to be used by construction contractors as needed, during all Project phases. Expected uses of the site included office grounds, storage yards, and stockpile areas, with the entire area subject to grading, vegetation removal, and fencing installation activities.

Reclamation and DWR have subsequently determined that two regions (a series of hills) within this area, identified as Borrow Area 12 (28.40 acres) and Borrow Area 14 (196.58 acres), could be used as borrow sites to provide embankment materials for the Project, shown in Figure 1. The overall amount of material excavation for the Project will not change, but the use of Borrow Areas 12 and 14 would decrease the necessary haul miles for the Project, as Borrow Areas 12 and 14 are approximately 1-2 miles closer to embankment activities than Borrow Area 6 and Basalt Hill. Borrow Area 12 is a grassland-covered hill located east of B.F. Sisk Dam's south valley section. Borrow Area 12 is approximately 28 acres in size, all of which is proposed for materials extraction. The top of Borrow Area 12 is flat, having been used in the past as a borrow area for initial construction of B.F. Sisk Dam, with two unpaved roads providing access to the top. Borrow Area 14 is located south of Borrow Area 12. It features a series of four elongated hills dominated by grassland vegetation, and totals approximately 200 acres, with approximately 137 acres proposed for materials extraction. Materials extraction at Borrow Areas 12 and 14 is intended to mimic the existing topographic contours of the sites to the greatest extent practicable, with the elevation of the existing hills and ridges being lowered up to 25 feet from their current elevations. Excavation in Borrow Areas 12 and 14 would largely avoid the lower elevations between the hills and any drainage features that exist in these areas.

Additional work is expected within these areas for use as borrow sites: developing and improving haul roads for access, blasting, excavation, processing, screening, and stockpiling of various type of rock and soil materials. Heavy equipment, material transport equipment, and a processing plant are expected to be used for these activities. Approximately 10 million cubic yards of material is expected to be excavated from these areas. This work is expected to occur 24 hours per day, from 2021 through 2029, for a total of 9 years. The removal of 10 million cubic yard of material from these areas would not reduce the hills to level ground. Upon completion of quarry activities, the change in surface area in Borrow Areas 12 and 14 has been calculated to be

approximately 1.82 acres. Consistent with the other borrow areas identified in the 2019 consultation, these areas would be restored and revegetated upon completion of construction.

2.3.4 Modifications to Mitigation Measures

The summary of environmental commitments from the 2019 ROD is provided in Appendix A. Several mitigation measures have been modified slightly from the text provided in the EIS/R and Reclamation's ROD. Additionally, one measure was removed, and eight new measures have been added. Table 1 details the modifications to mitigation measures; all measures not listed here have not been changed from the EIS/R. These measures are included in the project description; the environmental analysis below assumes full implementation.

Table 1. Modifications to Mitigation Measures

Mitigation Measure	Modification from EIS/R	Measure
SEIR-GHG-1	New measure	<p>Construction GHG Emissions Reductions</p> <p>To reduce greenhouse gas (GHG) emissions generated by equipment during construction, the following measures shall be incorporated into the Modified Project⁴:</p> <ul style="list-style-type: none"> i. The proper tuning and maintenance of all construction equipment in accordance with manufacturer’s specifications ii. Where feasible, employing the use of electrical or alternative fueled (i.e., non-diesel) construction equipment, including forklifts, concrete/industrial saws, pumps, aerial lifts, air compressors, and other comparable equipment types to the extent commercially available iii. To reduce the need for electric generators and other fuel-powered equipment, providing on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for construction where feasible and appropriate iv. Encouraging and providing carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes
SEIR-GHG-2	Replaces GHG-1 in EIS/R	<p>Construction Emissions</p> <p>The California Department of Water Resources (DWR) and Bureau of Reclamation (Reclamation) shall retire carbon offsets in a quantity sufficient to offset the Modified Project’s construction greenhouse gas (GHG) emissions to below the DWR thresholds of 25,000 metric ton carbon dioxide equivalent (MT CO₂e) total and 12,500 MT CO₂e per year for Extraordinary Construction Projects, consistent with the performance standards and requirements set forth below. Based on modeling conducted to date, a minimum of 104,537 MT CO₂e would be required to reduce emissions below the project-level significance threshold.</p> <p>Carbon Offset Standards – Eligible Registries, Acceptable Protocols and Defined Terms</p> <p>“Carbon offset” shall mean an instrument, credit, or other certification verifying the reduction of GHG emissions issued by the Climate Action Reserve, the American Carbon Registry, or Verra (previously, the Verified Carbon Standard). This shall include, but is not limited to, an instrument, credit or other certification issued by these registries for GHG reduction activities within the Merced County region. Offsets from the Clean Development Mechanism (CDM) registry or generated under CDM protocols shall not be purchased or used to satisfy offset requirements. Qualifying carbon offsets presented for compliance with this mitigation measure may be used provided that each registry shall continue its existing practice of requiring the following for the development and approval of protocols or methodologies:</p>

⁴ The term “Modified Project” describes the BF Sisk Safety of Dams Modification Project with the proposed modifications described in this document.

Mitigation Measure	Modification from EIS/R	Measure
		<p>i. Adherence to established GHG accounting principles set forth in the International Organization for Standardization (ISO) 14064, Part 2 or the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) Greenhouse Gas Protocol for Project Accounting</p> <p>ii. Oversight of the implementation of protocols and methodologies that define the eligibility of carbon offset projects and set forth standards for the estimation, monitoring and verification of GHG reductions achieved from such projects. The protocols and methodologies shall:</p> <p>a. Be developed by the registries through a transparent public and expert stakeholder review process that affords an opportunity for comment and is informed by science</p> <p>b. Incorporate standardized offset crediting parameters that define whether and how much emissions reduction credit a carbon offset project should receive, having identified conservative project baselines and the length of the crediting period and considered potential leakage and quantification uncertainties</p> <p>c. Establish data collection and monitoring procedures, mechanisms to ensure permanency in reductions, and additionality and geographic boundary provisions</p> <p>d. Adhere to the principles set forth in the program manuals of each of the aforementioned registries, as such manuals are updated from time to time</p> <p>Further, any carbon offset used to reduce the Modified Project’s GHG emissions shall be a carbon offset that represents the past or forecasted reduction or sequestration of one MT of CO₂e that is “not otherwise required” (California Environmental Quality Act [CEQA] Guidelines Section 15126.4(c)(3)). Each carbon offset used to reduce GHG emissions shall achieve additional, real, permanent, quantifiable, verifiable, and enforceable reductions, which are defined for purposes of this mitigation measure as follows:</p> <p>i. “Additional” means that the carbon offset is not otherwise required by law or regulation, and not any other GHG emissions reduction that otherwise would occur.</p> <p>ii. “Real” means that the GHG reduction underlying the carbon offset results from a demonstrable action or set of actions, and is quantified under the protocol or methodology using appropriate, accurate, and conservative methodologies that account for all GHG emissions sources and sinks within the boundary of the applicable carbon offset project, uncertainty, and the potential for activity-shifting leakage and market-shifting leakage.</p> <p>iii. “Verifiable” means that the GHG reduction underlying the carbon offset is well documented, transparent, and set forth in a document prepared by an independent verification body that is accredited through the American National Standards Institute (ANSI).</p> <p>iv. “Permanent” means that the GHG reduction underlying the carbon offset is not reversible; or, when GHG reduction may be reversible, that a mechanism is in place to replace any reversed GHG emission reduction.</p> <p>v. “Quantifiable” means the ability to accurately measure and calculate the GHG reduction relative to a project baseline in a reliable and replicable manner for all GHG emission sources and sinks included within the boundary of the carbon offset project, while accounting for uncertainty and leakage.</p>

Mitigation Measure	Modification from EIS/R	Measure
		<p>vi. “Enforceable” means that the implementation of the GHG reduction activity must represent the legally binding commitment of the offset project developer to undertake and carry it out.</p> <p>The protocols and methodologies of the Climate Action Reserve, the American Carbon Registry, and Verra establish and require carbon offset projects to comply with standards designed to achieve additional, real, permanent, quantifiable, verifiable, and enforceable reductions. The above definitions are provided as criteria and performance standards associated with the use of carbon offsets. Such criteria and performance standards are intended only to further construe the standards under CEQA for mitigation related to GHG emissions (see, e.g., State of California CEQA Guidelines Section 15126.4[a][c]), and are not intended to apply or incorporate the requirements of any other statutory or regulatory scheme not applicable to the Modified Project (e.g., the California Cap-and-Trade Program).</p>
HAZ-3	This measure was removed since the San Luis Reservoir Seaplane Base is no longer operational.	
SEIR-HAZ-1	New measure	Maintenance of Modified Project buildings, grounds, and infrastructure, including defensible space areas, shall be conducted using firesafe practices to minimize the potential for wildfire ignitions resulting from equipment use. Firesafe practices shall be consistent with California Public Resources Code Sections 4427, 4428, 4431, and 4442. Maintenance activities shall be ceased during periods of high fire hazard (e.g., red flag warnings), except where necessary to maintain public safety and available water supply for fire suppression purposes.
SEIR-HAZ-2	New measure	Campground operations shall be modified during periods of high fire hazard (e.g., red flag warnings) to reduce the potential for wildfire ignitions. Modifications may include, but are not limited to, banning campfires and open flames, and partially or completely closing the campground to the public.
SEIR-BIO-1	Replaces TERR-3 from EIS/R	<p>Special-Status Amphibians</p> <p>Before and after construction:</p> <ul style="list-style-type: none"> The Modified Project proponent shall submit the name and credentials of a California Department of Water Resources (DWR) biologist qualified to act as construction monitor to the U.S. Fish and Wildlife Service

Mitigation Measure	Modification from EIS/R	Measure
		<p>(USFWS) and California Department of Fish and Wildlife (CDFW) for approval at least 15 days before construction work begins. General minimum qualifications are a 4-year degree in biological sciences and experience in surveying, identifying, and handling California tiger salamanders and California red-legged frogs. The qualified biologist shall be present at all times during construction. Consultation with the USFWS through the Section 7 process may be required to determine avoidance, conservation, and mitigation measures.</p> <ul style="list-style-type: none"> • The USFWS- and CDFW-approved biologist, under the appropriate federal and state authorities (e.g., permitting and consultation), shall survey the work sites 2 weeks before the onset of construction. If California tiger salamanders or California red-legged frogs (or their tadpoles or eggs) are found, the approved biologist shall contact USFWS and CDFW to determine whether moving any of these life stages is appropriate. If USFWS and CDFW approve moving the animals, the biologist shall be allowed sufficient time to move frogs and/or salamanders from the work sites before work begins. If these species are not identified, construction can proceed at these sites. The biologist shall use professional judgment to determine whether (and if so, when) the California tiger salamanders and/or California red-legged frogs are to be moved. The biologist shall immediately inform the construction manager that work shall be halted, if necessary, to avert avoidable take of listed species. • The known location of California red-legged frogs and Willow Spring, the water source for the perennial frog pond near the borrow area, shall be avoided during construction with a buffer of 250 feet to avoid modifying aquatic habitat that supports the frog population; or as otherwise approved by the resource agencies. • Areas impacted by construction shall be monitored during construction to identify, capture, and relocate special-status amphibians, if present. • Areas beneath construction equipment and vehicles shall be inspected daily, prior to operation, for presence of special-status amphibians under tracks/tires and within machinery. If special-status amphibians are found, a qualified biologist shall capture and relocate animals from work sites. • Appropriate state and federal permits for handling of special-status species shall be acquired. • If necessary, a detailed amphibian relocation plan shall be prepared at least 3 weeks before the start of groundbreaking and submitted to CDFW and USFWS for review. The purpose of the plan is to standardize amphibian relocation methods and relocation sites. • The USFWS- and CDFW-approved biologist shall be present at the active work sites until special-status amphibians have been removed, and habitat disturbance has been completed. Thereafter, compliance with all minimization measures shall be monitored by an individual who has received training from a CDFW- and USFWS-approved biologist, consistent with USFWS requirements.

Mitigation Measure	Modification from EIS/R	Measure
		<ul style="list-style-type: none"> • The Modified Project proponent and its contractors shall install frog-exclusion fencing (i.e., silt fences) around all construction areas that are within 100 feet of any identified ponds that provide potential special-status amphibian aquatic breeding habitat. During and after rain events, an approved biologist shall monitor work areas for the presence of special-status amphibians. • DWR shall ensure that compensation is provided for permanent and temporary impacts on California tiger salamander and California red-legged frog aquatic habitat. Compensatory mitigation shall be provided for the loss of aquatic breeding sites that will be filled or otherwise directly affected by the Modified Project, as well as mitigate for any impacts on associated California red-legged frog upland habitat through compensatory mitigation. If possible, compensatory mitigation areas shall be located within a California red-legged Frog Recovery Area, as identified in the 2002 California Red-legged Frog Recovery Plan (USFWS 2002). • The total area, size, and number of California red-legged frog or California tiger salamander mitigation ponds to be created will be based on a comparable loss of breeding sites (e.g., a minimum 1:1 replacement ratio) as a result of the Modified Project. These ponds shall concurrently satisfy wetland mitigation requirements identified in Mitigation Measure TERR-16 in the 2019 EIS/EIR. To the degree possible, new mitigation ponds that are created for California red-legged frog and California tiger salamander shall be hydrologically self-sustaining and shall not require a supplemental water supply.
SEIR-BO-2	Replaces TERR-5 from EIS/R	<p>Special-Status Reptiles</p> <p>Before construction activities begin, a qualified biologist shall conduct special-status reptile (i.e., San Joaquin whipsnake and coast horned lizard) surveys 2 weeks prior to construction activities within work sites and within 100 feet of disturbance areas. A qualified biologist shall relocate any special-status reptiles to suitable habitat outside of areas of disturbance. There is possibility of special-status reptiles to move into the work sites after preconstruction surveys have checked the area and some individuals could be subject to mortality. If special-status reptiles are detected in work sites during construction, activities and equipment travel shall cease in the immediate area of detection until the special-status reptile has left work site or has been relocated out of the area by a qualified biologist.</p>
SEIR-BIO-3	Replaces TERR-9 from EIS/R	<p>Burrowing Owl</p> <p>Prior to construction, surveys for burrowing owls shall be conducted in areas supporting potentially suitable habitat. Breeding season surveys shall be performed to determine the presence of burrowing owls for the purposes of inventory, monitoring, avoidance of take, and determining appropriate mitigation. In California, the breeding season begins as early as February 1 and continues through August 31. Under the survey guidelines in the California Department of Fish and Wildlife's (CDFW's) Staff Report on Burrowing Owl Mitigation (CDFG 2012), a biologist</p>

Mitigation Measure	Modification from EIS/R	Measure
		<p>shall: 1) perform a habitat assessment to identify essential components of burrowing owl habitat, including artificial nest features; 2) perform intensive burrow surveys in areas that are identified to provide suitable burrowing owl habitat, and; 3) perform at least four appropriately-timed breeding season surveys (four survey visits spread evenly [roughly every 3 weeks] during the peak of the breeding season, from April 15 to July 15) to document habitat use.</p> <p>Preconstruction surveys (referred to as take avoidance surveys in CDFG [2012]) shall be used to assess the owl presence before site modification is scheduled to begin. Generally, initial preconstruction surveys should be conducted within 7 days, but no more than 30 days prior to ground-disturbing activities. Additional surveys may be required when the initial disturbance is followed by periods of inactivity or the development is phased spatially and/or temporally over the Modified Project area. Up to four or more survey visits performed on separate days may be required to assure with a high degree of certainty that site modification and grading will not take owls. The full extent of the preconstruction survey effort shall be described and mapped in detail (e.g., dates, time periods, area[s] covered, and methods employed) in a biological report that shall be provided for review to CDFW.</p> <p>In addition to the above survey requirements, the following measures shall be implemented to reduce Modified Project impacts to burrowing owls:</p> <ul style="list-style-type: none"> • Construction exclusion areas (e.g., orange exclusion fence or signage) shall be established around occupied burrows, where no disturbance shall be allowed. During the nonbreeding season (September 1 through January 31), the exclusion zone shall extend at least 160 feet around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend 250 feet around occupied burrows (or farther if warranted to avoid nest abandonment). • If work or exclusion areas conflict with owl burrows, passive relocation of on-site owls could be implemented as an alternative, but only during the nonbreeding season and only with CDFW approval. The approach to owl relocation and burrow closure will vary depending on the number of occupied burrows. Passive relocation shall be accomplished by installing one-way doors on the entrances of burrows within 160 feet of the Modified Project area. The one-way doors shall be left in place for 48 hours to ensure the owls have left the burrow. The burrows shall then be excavated with a qualified biologist present. Construction shall not proceed until the Modified Project area is deemed free of owls. • Unoccupied burrows within the immediate construction area shall be excavated using hand tools, and then filled to prevent reoccupation. The qualified biologist shall be present during construction to continue examination of burrows. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl allowed to escape. Excavation shall be completed once the biological monitor confirms the burrow is empty.

Mitigation Measure	Modification from EIS/R	Measure
		<ul style="list-style-type: none"> Artificial nesting burrows shall be provided as a temporary measure when natural burrows are lacking. To compensate for lost nest burrows, artificial burrows shall be provided outside the 160-foot buffer zone. The alternate burrows shall be monitored daily for 7 days to confirm that the owls have moved in and acclimated to the new burrow.
SEIR-BIO-4	Replaces TERR-12 from EIS/R	<p>San Joaquin Kit Fox San Joaquin kit fox would be affected by construction activities if animals are harmed or killed by equipment, their movement is blocked, or their dens or other habitat is altered or destroyed. Consultation with the U.S. Fish and Wildlife Service (USFWS) through the Section 7 process may be required to determine avoidance, conservation, and mitigation measures. Prior to construction, a qualified biologist shall conduct surveys to identify potential dens more than 4 inches in diameter. A multispecies burrow assessment in 2020 located numerous potential San Joaquin kit fox dens in suitable habitat throughout the project site (Dudek 2020). If dens are located within the proposed work area and cannot be avoided during construction activities, a USFWS- and California Department of Fish and Wildlife (CDFW)-approved biologist shall determine if the dens are occupied. If occupied dens are present within the proposed work area, their disturbance and destruction shall be avoided. Exclusion zones shall be implemented following the latest USFWS procedures (USFWS 2011). The Modified Project proponent shall implement San Joaquin kit fox protection measures.</p> <p>The following measures, which are intended to reduce direct and indirect Project impacts on San Joaquin kit foxes, are derived from the San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS 1999) and the Standardized Recommendations for Protection of the San Joaquin Kit Fox (USFWS 2011). The following measures shall be implemented for construction areas at San Luis Reservoir:</p> <ul style="list-style-type: none"> Preconstruction surveys shall be conducted within 200 feet of work areas to identify potential San Joaquin kit fox dens or other refugia in and surrounding workstations. A qualified biologist shall conduct the survey for potential kit fox dens 14 to 30 days before construction begins. All identified potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium at den entrances and monitoring for at least 3 consecutive nights. If no activity is detected at these den sites, they shall be closed following guidance established in the USFWS Standardized Recommendations report (USFWS 2011). If kit fox occupancy is determined at a given site during the preconstruction surveys or during the construction period, the construction manager should be immediately informed that work should be halted within 200 feet of the den and the USFWS contacted. Depending on the den type, reasonable and prudent measures to avoid effects to kit foxes could include seasonal limitations on Modified Project construction at the site (i.e., restricting the construction period to avoid spring–summer pupping season), and/or establishing

Mitigation Measure	Modification from EIS/R	Measure
		<p>a construction exclusion zone around the identified site, or resurveying the den 1 week later to determine species presence or absence.</p> <ul style="list-style-type: none"> • Off-road vehicle and equipment movement shall be limited to the Modified Project footprint. • To compensate for permanent impacts to grassland, which provides habitat for San Joaquin kit fox, lands shall be acquired and covered by conservation easements or mitigation credits shall be purchased at a 2:1 mitigation ratio, or other compensation ratios approved by USFWS and CDFW.
SEIR-BIO-5	Replaces TERR-16 from EIS/R	<p>Mitigation Measures for Special-Status Communities, including Native Grassland and Jurisdictional Wetlands or Waters, and Streambeds and Banks Regulated by CDFW, RWQCB, and USACE</p> <p>SEIR-BIO-5a. Final project design shall avoid and minimize the fill of wetlands and other waters to the greatest practicable extent. The following actions shall be performed to protect jurisdictional wetlands: The distribution of federal and state jurisdictional wetlands and waters; streambeds and banks regulated by the California Department of Fish and Wildlife (CDFW); and sensitive habitat regulated by CDFW, shall be defined and avoided to the greatest possible extent.</p> <p>Prior to construction, a qualified biologist shall delineate the extent of jurisdictional areas to be avoided in the field. The Bureau of Reclamation (Reclamation) shall designate areas to be avoided as “Restricted Areas” and protect them using highly visible fencing, rope, or flagging, as appropriate based on-site conditions. No construction activities or disturbance shall occur within restricted areas that are designated to protect wetlands.</p> <p>The removal of riparian and wetland vegetation shall be minimized. The disturbance of riparian and aquatic habitat north of the access road to the dam shall be avoided.</p> <p>The removal or damage to purple needlegrass grassland, gum plant patches and tarweed fields communities within annual grassland, and <i>Baccharis pilularis</i>/(<i>Nassella pulchra</i>–<i>Elymus glaucus</i>–<i>Bromus carinatus</i>), and narrowleaf goldenbush communities within scrub/chaparral shall be minimized. Impacts to these communities in the staging area shall be avoided.</p> <p>SEIR-BIO-5b. Where jurisdictional wetlands and other waters cannot be avoided, to offset temporary and permanent impacts that would occur as a result of the Modified Project, restoration and compensatory mitigation shall be provided as described below. A wetland mitigation and monitoring plan shall be developed in coordination with CDFW, the U.S. Army Corps of Engineers (USACE), and/or the Regional Water Quality Control Board (RWQCB) that details mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities; and other CDFW-jurisdictional areas. The plan shall quantify the total acreage affected; provide for mitigation as described below to wetland or riparian habitat; annual success criteria; mitigation</p>

Mitigation Measure	Modification from EIS/R	Measure
		<p>sites; monitoring and reporting requirements; and site-specific plans to compensate for wetland losses resulting from the Modified Project.</p> <p>Prior to construction, the aquatic structure of wetland and riparian areas to be disturbed shall be photo-documented, and measurements of width, length, and depth shall be recorded. Reclamation shall recontour and revegetate disturbed portions of jurisdictional areas in areas temporarily affected by construction prior to demobilization by the contractor at the end of Modified Project construction. Creek banks shall be recontoured to a more stable condition if necessary.</p> <p>Revegetation shall include a palette of species native to the watershed area according to a revegetation plan to be developed by Reclamation and submitted to USACE, CDFW, and RWQCB for approval. Following removal, woody trees habitat acreage shall be replanted at a minimum 1:1 ratio, or as determined and agreed upon by the permitting agencies. Interim vegetation or other measures shall be implemented as necessary to control erosion in disturbed areas prior to final revegetation.</p> <p>Wetland and other waters impacts in the construction area shall be compensated at a ratio of 2:1 or at a ratio agreed upon by the wetland permitting agencies. Compensatory mitigation shall be conducted by creating or restoring wetland and aquatic habitat at an agency-approved location on nearby lands or through purchasing mitigation credits at a USACE- and/or CDFW-approved mitigation bank (depending on the resource). If mitigation is conducted on or off-site, a 5-year wetland mitigation and monitoring program for on-site and off-site mitigation shall be developed. Appropriate performance standards may include, but are not limited to a 75% survival rate of restoration plantings; absence of invasive plant species; and a viable, self-sustaining creek or wetland system at the end of 5 years.</p> <p>A weed control plan to limit the Modified Project’s potential to spread noxious or invasive weeds shall be developed. This plan would be consistent with current integrated pest management plans that are already in practice on lands surrounding San Luis Reservoir. Noxious or invasive weeds include those rated as “high” in invasiveness by the California Invasive Plant Council. The plan shall include a baseline survey to identify the location and extent of invasive weeds in the Modified Project area prior to ground-disturbing activity, a plan to destroy existing invasive weeds in the construction area prior to initiation of ground-disturbing activity, weed-containment measures while the Modified Project is in progress, and monitoring and control of weeds following completion of construction.</p>
SEIR-BIO-6	New measure	<p>Avoidance of Bridge-Nesting Birds</p> <p>Prior to the construction and removal of the temporary haul road under State Route (SR) 152, surface modification treatment (Polytetrafluoroethylene [PTFE] sheeting) shall be applied to the SR-152 bridge to prevent nesting by</p>

Mitigation Measure	Modification from EIS/R	Measure
		species such as cliff swallow, black phoebe, and white-throated swift (if weep holes are present). PTFE sheeting shall be installed vertically at the junctures of vertical and overhead surfaces on the sides and underneath the first 75 feet of the SR-152 bridge extending from the southern abutment of the bridge to the north along the bridge. The treatment shall be applied before the nesting season (February 1). In combination with PTFE sheets, broadcast call units playing distress calls from adult cliff swallows may be used to further deter nesting. If used, distress calls should be played for 26 seconds in duration continuously via broadcast call units installed within the nest exclusion area as described in “Methods for Excluding Cliff Swallows from Nesting on Highway Structures” (UC Davis 2009). During the nesting season, the exclusion treatment shall be supplemented with bi-weekly inspections by a qualified biologist to evaluate treatment integrity, inspect the area for active nests, and subsequently remove any partial nests, as feasible. The 75-foot treatment area has been established as a standard disturbance buffer for cliff swallow, black phoebe, and white-throated swift for work activities that involve heavy machinery and personnel (PG&E 2016).
SEIR-BIO-7	New measure	<p>Elk Avoidance and Minimization</p> <p>In order to minimize conflicts between construction activities and tule elk within the Modified Project area, a Tule elk site management plan shall be developed to direct control measures. At a minimum, the plan shall specify that Tule elk shall be directed (herded) from the work area(s) such that they are not confined (trapped) between construction activities and landscape features such as fences, buildings, water bodies, and in particular State Route 152. When herding elk, they should always be provided an escape route to the general south. The California Department of Fish and Wildlife (CDFW) indicates that Tule elk are readily herded by people or vehicles and quickly associate the need to move with specific people or vehicles; the plan should specify that particular vehicles (choose red trucks, for example) or personnel shall be tasked with herding activities. Once elk have been herded away from the construction zone, they will generally stay a comfortable distance from activities. If Tule elk do re-enter the construction zone, then additional herding efforts shall be required. Additionally, during the March and April periods, lone females shall be provided additional monitoring since they may be birthing, though they quickly rejoin the herd within a few days after birthing. Once developed, the plan shall be reviewed by CDFW elk biologists.</p>
SEIR-REC-1	Replaces REC-1 from EIS/R ⁵	<p>Campsite and Facilities Replacement</p> <p>Campsites closed at San Luis Reservoir during construction of the Crest Raise Alternative shall be replaced at a 1:1 ratio at the San Luis Creek Use Area and then as necessary at the Los Banos Creek Use Area, including six</p>

⁵ Mitigation measure REC-1 in the 2019 EIS/R included the expansion of the boat launch at Dinosaur Point Use Area. Since that time, State Parks has indicated the previously proposed expansion of this boat launch is no longer required, as the facility’s existing capacity would accommodate any increase in use due to the closure of the Basalt Campground boat launch for the duration of Modified Project construction. As such, modifications to the Dinosaur Point Use Area are no longer included in the Project activities.

Mitigation Measure	Modification from EIS/R	Measure
		<p>Americans with Disabilities Act (ADA)-accessible campsites and RV accommodations. These new replacement campsites shall be developed consistent with the new facilities considered in the San Luis Reservoir State Recreation Area Resource Management Plan/General Plan (San Luis Reservoir SRA RMP/GP) and shall not exceed the quantities of new facilities considered in the San Luis Reservoir SRA RMP/GP at each use area. The new campsites shall be constructed concurrent to the crest construction period during a period of low precipitation in order to reduce the risk of accidental leaks or spills, potential for soil contamination, and to minimize erosion of loose materials in construction areas, as per Goal RES-WQ4 in the San Luis Reservoir SRA RMP/GP (Reclamation and CDPR 2013):</p> <ul style="list-style-type: none"> • Design, construct, and maintain buildings, roads, trails, campsites, boat launches and marinas, and associated infrastructure to minimize stormwater runoff, promote groundwater recharge, and prevent soil erosion. The new campsites shall be constructed within the San Luis Creek Use Area at the SRA on O’Neill Forebay. The Bureau of Reclamation (Reclamation) shall include this mitigation requirement in bid documents and construction contracts. <p>In addition, Reclamation shall work with the California Department of Parks and Recreation to implement the following measure:</p> <ul style="list-style-type: none"> • The boat launch at the San Luis Creek Use Area shall be expanded by adding a launch lane and a boarding float. In addition, a fish cleaning station, public storage lockers, and shower facilities shall be developed at San Luis Creek Use Area.
SEIR-CR-1	New measure consistent with the Programmatic Agreement	<p>Unanticipated Discovery of Archaeological Resources</p> <p>Prior to construction, a qualified cultural resources specialist, meeting the Secretary of the Interior’s Professional Qualification Standards for Archaeology, shall review the final Modified Project design to confirm impacts to all known cultural resources and/or resources identified to be of importance to consulting Native American tribes, have been considered and addressed. As stipulated by Mitigation Measure CR-1 of the B.F. Sisk Dam Safety of Dams Modification Project Environmental Impact Statement/Environmental Impact Report (2019 EIS/EIR), the Programmatic Agreement Among The Bureau of Reclamation, Interior Region 10 California-Great Basin; and The California State Historic Preservation Officer Regarding Compliance with Section 106 of the National Historic Preservation Act Pertaining to the Implementation of the Safety of Dams B.F. Sisk Dam Project (Programmatic Agreement) was prepared. This document, specifically the section pertaining to Treatment of Post Review Discoveries, provides that in the event of a post-review discovery during construction or other Modified Project-related activities, the Bureau of Reclamation (Reclamation) in conjunction with California Department of Water Resources (DWR) shall determine if ongoing construction activities will affect a previously unidentified cultural resource that may be eligible for the National Register of Historic Places and California Register of Historical Resources or affect a known cultural resource in an unanticipated manner, and address the discovery or unanticipated effect in accordance with Title 36, Part 800.13(b) of the Code of Federal Regulations (CFR) (Reclamation and SHPO</p>

Mitigation Measure	Modification from EIS/R	Measure
		<p>2019). There remain areas within the Modified Project that have not been subject to cultural resources survey because no activities are presently planned in these areas with potential to impact cultural resources. As stipulated by CR-1 of the 2019 EIS/EIR, should project plans change such that use of these areas could introduce impacts to cultural resources, additional cultural resources survey and evaluation efforts will be performed as stipulated in the Programmatic Agreement shall act as a guide for additional cultural resources survey and evaluation efforts.</p> <p>All construction crews shall be alerted to the potential to encounter sensitive cultural and tribal cultural material. This may occur through inclusion of a cultural resources component within a Worker Environmental Awareness Program or other preconstruction training. Prior to construction, a communication matrix with primary and secondary cultural resources points of contact from Reclamation, DWR, consulting parties, and other pertinent project personnel shall be developed and circulated. A simple overview guide with roles and responsibilities, cultural resource management protocols, and a list of guiding documents shall be prepared as a companion to this communication matrix prior to construction. In the event that archaeological resources (e.g., sites, features, or artifacts) are exposed during construction activities for the Modified Project, all construction work occurring in the vicinity shall immediately stop until a qualified archaeologist can evaluate its significance and determine whether additional study is warranted. A minimum work exclusion buffer should be assumed to be no less than 100 feet, or as otherwise specified by the approved Programmatic Agreement (Reclamation and SHPO 2019) and its future amendments. This buffer may be adjusted by the qualified archaeologist in consultation with the lead agency. Prehistoric archaeological deposits may be indicated by the presence of discolored or dark soil, fire-affected material, the presence of imported shell, burned or complete bone, non-local lithic materials, or other characteristics observed to be atypical of the surrounding area. Common prehistoric artifacts may include modified or battered lithic materials; lithic or bone tools that appeared to have been used for chopping, drilling, or grinding; projectile points; fired-clay ceramics or non-functional items; and other items. Historic-age deposits are often indicated by the presence of glass bottles and shards, ceramic material, building or domestic refuse, ferrous metal, or old features such as concrete foundations or privies. Depending on the nature and the significance of the find under the California Environmental Quality Act (14 CCR 15064.5[f]; California Public Resources Code, Section 21082) and/or Section 106 of the National Historic Preservation Act, it may be appropriate for the qualified archaeologist to simply record the find and allow work to continue. Avoidance should be considered the preferred option for treatment of unanticipated cultural resources. Prior to any ground-disturbing investigative techniques, the feasibility of resource avoidance should be considered. If the discovery proves significant, as determined by the qualified archaeologist in consultation with the lead agency(s) and other consulting parties, additional work, such as testing, data recovery, or other alternatives, may be warranted. The qualified archaeologist shall prepare a report to document compliance with approved mitigation requirements and to DWR/Reclamation standards. This report shall be reviewed by lead agency staff and, once finalized, submitted to a California Historical Resources Information System information center.</p>

Mitigation Measure	Modification from EIS/R	Measure
		<p>Reclamation will ensure that any non-Native American Graves Protection and Repatriation Act–related cultural materials and associated records falling under Reclamation’s Scope of Collections Statement (Programmatic Agreement, Appendix F) that result from the identification, evaluation, and treatment of historic properties on Reclamation land conducted under the Programmatic Agreement shall be properly maintained in accordance with 36 CFR 79. If there is an adverse effect determined that requires the development of a Historic Properties Treatment Plan (HPTP) under the Programmatic Agreement, Reclamation shall ensure that documentation of the curation of these materials is prepared and provided to parties named in the HPTP specific to the resolution of effects for that historic property as stipulated within the HPTP. Reclamation’s responsibilities under the Programmatic Agreement shall continue and shall include follow-up with consulting parties should any changes to the Modified Project occur.</p>
<p>SEIR-CR-2</p>	<p>New measure consistent with the Programmatic Agreement</p>	<p>Unanticipated Discovery of Human Remains</p> <p>In the event that Native American human remains, funerary objects, sacred objects, and/or objects of cultural patrimony are inadvertently discovered under or on the surface of Bureau of Reclamation (Reclamation) lands, Reclamation shall follow the procedures outlined in the Native American Graves Protection and Repatriation Act (NAGPRA), as specified in the implementing regulations at Title 43, Section 10.2(d)(1–2) of the Code of Federal Regulations (CFR) and Stipulation X and Appendix E of the Programmatic Agreement Among The Bureau of Reclamation, Interior Region 10 California-Great Basin; and The California State Historic Preservation Officer Regarding Compliance with Section 106 of the National Historic Preservation Act Pertaining to the Implementation of the Safety of Dams B.F. Sisk Dam Project. Reclamation shall ensure that all such NAGPRA cultural items encountered during any undertaking on Reclamation lands are treated in accordance with the requirements at Section 3(c–d) of NAGPRA and the implementing regulations at 43 CFR 10.</p> <p>On State-owned or private lands, in accordance with Section 7050.5 of the California Health and Safety Code, if suspected human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur on either federal or State-owned lands until agency approval is provided. On State-owned or private lands, the county coroner shall determine within 2 working days of notification of the discovery whether the remains are human in origin. If the county coroner determines that the remains are, or are believed to be, Native American, the county coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The descendants or authorized representative may, with the permission of the owner of the land, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation</p>

Mitigation Measure	Modification from EIS/R	Measure
		work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The most likely descendant shall complete inspection of the remains within 48 hours of being granted access to the site.
SEIR-CR-3	New measure consistent with the Programmatic Agreement	<p>Archaeological and Native American Monitors and Worker Environmental Awareness Program</p> <p>The Bureau of Reclamation (Reclamation) has developed a geoarchaeological sensitivity map and supporting summary that identifies areas of elevated potential for encountering buried resources within the area of potential effect; archaeological monitoring shall be required in the higher sensitivity areas identified by this map. Archaeological monitors shall be provided a copy of Reclamation’s geoarchaeological sensitivity map and supporting documentation at least 30 days prior to the initiation of ground-disturbing activities. Consulting Native American tribes shall be given the opportunity to monitor in higher sensitivity areas identified as having elevated potential for encountering buried resources. A copy of the geoarchaeological sensitivity map and supporting documentation shall be provided to Native American Monitors at least 30 days prior to the initiation of ground-disturbing activities within areas subject to monitoring. Prior to and during construction, all construction crews shall be alerted to these monitoring requirements and the potential to encounter sensitive cultural and tribal cultural material. This may occur through inclusion of a cultural resources component within a Worker Environmental Awareness Program or other preconstruction training.</p>

3. Affected Environment and Environmental Consequences

The 2019 EIS/R analyzed the Project's impact to 21 resource categories: Water Quality, Surface Water Supply, Groundwater Resources, Air Quality, Flood Protection, Visual Resources, Noise and Vibration, Traffic and Transportation, Hazards and Hazardous Materials, Fisheries Resources, Terrestrial Resources, Regional Economics, Land Use, Agricultural Resources, Recreation, Environmental Justice, Indian Trust Assets, Public Utilities, Cultural Resources, Population and Housing, and Geology, Seismicity and Soils.

The Supplemental EIR considered potential impacts of the Proposed Action, on Water Quality and Groundwater Resources, Air Quality, Greenhouse Gas Emissions, Flood Protection, Visual Resources, Noise and Vibrations, Traffic and Transportation, Hazards and Hazardous Materials, Biological (Terrestrial) Resources, Land Use, Recreation, Cultural Resources, Geology, Seismicity, and Soils, and Tribal Cultural Resources. As described in the Supplemental EIR, the project modifications are not expected to change the Project's expected impact to surface water supply, fisheries resources, agricultural resources, public utilities, services, and power, and population and housing. Impacts to these resource categories were therefore not discussed in detail. Reclamation has not identified any additional potential impacts to these resources expected from the project modifications; therefore, these resource categories are not described in detail here.

Reclamation has included additional information about the Proposed Action's potential impacts to Regional Economics, Environmental Justice, and Indian Trust Assets, as required by Department of the Interior Regulations, Executive Orders, and Reclamation guidelines.

3.1 Water Quality and Groundwater

3.1.1 Affected Environment

Chapter 3.1 of the Supplemental EIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.1.2 Environmental Consequences

No Action Alternative

As described in Chapter 4 the 2019 EIS/R, construction activities under the Project could temporarily violate existing water quality standards or waste discharge requirements. Further, the Project may affect groundwater resources due to changes in surface water deliveries and consequent expected modifications to groundwater pumping, as described in Chapter 6 of the 2019 EIS/R.

The Project does not specifically include any mitigation measures pertaining to water quality or groundwater resources, but the Project construction will be completed in accordance with all applicable policies, water quality standards, and waste discharge requirements. Specifically, the contractor will operate under a National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which will include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), implementation and monitoring of best management practices (BMPs), implementation of the best available technology for toxic and non-conventional pollutants, implementation of the best conventional technology for

conventional pollutants, and periodic submittal of performance summaries and reports to the Central Valley Regional Water Quality Control Board (CVRWQCB). Further, as described below in Section 3.7, mitigation measure HAZ-1 requires the contractor to coordinate with State Parks and the CVRWQCB to prevent hazardous contamination from the SLRSRA Leaking Underground Storage Tank cleanup site.

Under the No Action Alternative, no additional impacts would occur, beyond those described in the 2019 EIS/R.

Proposed Action

Chapter 3.1.4 of the Supplemental EIR details the expected impacts of the Proposed Action to water quality and groundwater resources. This text, summarized here, is incorporated by reference. The additional construction activities under the Proposed Action, including the construction of the campground and SLCDUA improvements, additional contractor use areas, and additional activities at Borrow Areas 12 and 14 could result in altered stormwater drainage patterns, sediment releases, or pollutant releases that have potential to degrade water quality in the Project area. Specifically, ground disturbance associated with vegetation removal, grading, excavation of material, stockpiling and transport of material, and restoration could result in sediment releases, pollutant releases, and increased quantity and velocity of stormwater runoff—which may result in degradation of surface water and groundwater quality. However, consistent with activities described in the 2019 EIS/R, construction would be completed in accordance with a NPDES Construction General Permit, including the development and implementation of a SWPPP, implementation and monitoring of BMPs, implementation of the best available technology for toxic and non-conventional pollutants, implementation of the best conventional technology for conventional pollutants, and periodic submittal of performance summaries and reports to the CVRWQCB. Implementation of these measures as part of the Project would reduce the potential temporary impacts to water quality and associated beneficial uses from the Proposed Action.

Following construction, the additional contractor use areas and Borrow Areas 12 and 14 would be revegetated and restored to preserve the existing topographic contours of the site; therefore, no impacts to water quality resources are expected following the conclusion of construction. Recreation mitigation activities would increase the amount of impervious surface in the area (totaling less than one acre), which may result in localized runoff into unpaved areas and discharged into the O'Neill Forebay and could contribute to degradation of water quality and impair designated beneficial uses. However, the campground construction and SLCDUA improvements would be designed and constructed in accordance with SLRSRA RMP/GP goals, including reduced water quality impacts. Existing drainage patterns would be maintained to the extent possible, reducing stormwater runoff volumes and preventing soil erosion and siltation of the O'Neill Forebay. Applicable SLRSRA RMP/GP goals are described in Section 3.1.4 of the Supplemental EIR, and are: (1) ensure that existing, new, or increased visitor uses do not affect water quality; (2) avoid access to sensitive watercourses to prevent degradation related to trampling, surface runoff, and sedimentation; (3) design, construct, and maintain buildings, roads, trails, campsites, boat launches and marinas, and associated infrastructure to minimize stormwater runoff, promote groundwater recharge, and prevent soil erosion. Given the low-impact design of the facilities, the Proposed Action is not expected to increase runoff water such

that it would exceed the capacity of stormwater drainage system. Therefore, the operation of improved recreational facilities would not degrade surface water quality or violate water quality standards or waste discharge requirements.

The Proposed Action would not change expected surface water deliveries from those described in the 2019 EIS/R; therefore, the Proposed Action would not result in any impacts to groundwater resources that may result from modified surface water deliveries. Operation of the new campground is expected to increase water demand (estimated 310,000 gallons per month) in the Project area. Given the early stage of design, it is not yet clear whether the existing water system would be able to meet the increased demand, or whether a groundwater supply well would be required. If required, the groundwater extraction would be completed in accordance with the Delta-Mendota Subbasin Groundwater Sustainability Plan, and would not result in degradation of groundwater quality, impair reasonably anticipated beneficial uses of groundwater, exceed regulatory standards, nor result in any associated adverse environmental effects (including subsidence). Facility improvements within SLCDUA are not expected to increase water demand; installation of modern, water-efficient toilets and sinks may result in an overall water savings following construction of the improvements.

Therefore, Reclamation does not expect the Proposed Action to change the Project's expected impacts to water quality and groundwater resources from those described in the 2019 EIS/R.

3.2 Air Quality and Greenhouse Gases

3.2.1 Affected Environment

Chapters 3.2 and 3.3 of the Supplemental EIR provide an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.2.2. Environmental Consequences

No Action Alternative

As described in the 2019 EIS/R, the Project may affect air quality due to temporary and short-term construction-related emissions of criteria pollutants, or precursors, in a manner that would exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD)'s significance thresholds or the general conformity *de minimis* thresholds, or construction-related emissions of toxic air contaminants (TACs) that may exceed the SJVAPCD's significance thresholds. The Project may also result in the creation of objectionable odors. Additionally, construction could indirectly and directly generate greenhouse gas emissions that may impact the environment, and the activities could conflict with applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions.

The Project includes several measures to reduce emissions associated with construction activities, as described in the 2019 ROD. The Project includes mitigation measures AQ-1, which will reduce emissions from off-road construction equipment by using Tier 4 construction equipment, AQ-2, which will reduce exhaust emissions from on-road trucks by using vehicles that meet model year 2015 or better emission standards, and AQ-3, which requires the implementation of best available mitigation measures for the construction phase, and GHG-1, which will reduce greenhouse gas emissions by requiring the contractor to purchase carbon

offsets before the commencement of construction activities. The full text of the mitigation measures is included in this EA as Appendix A. Implementation of these mitigation measures will reduce the Project's impacts on air quality and greenhouse gases.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

Chapter 3.2.4 of the Supplemental EIR details expected impacts of the Proposed Action. This text, summarized here, is incorporated by reference. Implementation of the project modifications may conflict with or obstruct implementation of the applicable air quality plan, violate any ambient air quality standard or contribute substantially to an existing or projected violation of any ambient air quality standard, could result in a net increase in criteria pollutants for which the area of analysis is in nonattainment under applicable ambient air quality standards, including ozone precursors, or expose sensitive receptors to substantial pollutant concentrations. The Proposed Action could further generate greenhouse gas emissions, indirectly and directly, that may impact the environment, and the activities could conflict with applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions.

Specifically, the additional activities associated with construction of the recreation mitigation activities and contractor use areas may result in additional construction-related criteria air pollutants, TACs, and greenhouse gas emissions. Construction scenario assumptions and associated emissions are detailed in Chapters 3.2.4 and 3.3.4, and Appendix B of the Supplemental EIR. Operation of the campground may increase criteria air pollutant emissions from motor vehicle travel, maintenance, and campfire-related emissions and greenhouse gas emissions from area sources, (landscaping equipment), energy use, vehicular traffic, propane combustion, waste disposal, and water supply and wastewater treatment and disposal. These emission increases could result in the Project exceeding the SJVAPCD thresholds of significance for criteria air pollutant emissions and greenhouse gas emissions, or conflict with or obstruct implementation of SJVAPCD's air quality plans without mitigation.

The change in borrow area location to Borrow Areas 12 and 14 would result in shorter haul truck trips than those analyzed in the 2019 EIS/R, resulting in an associated decrease in expected criteria air pollutants and greenhouse gases.

As described in Table 1, the Proposed Action includes implementation of several mitigation measures to reduce the Project's impacts to air quality and greenhouse gases. Consistent with the No Action Alternative, measures AQ-1, AQ-2, and AQ-3 would reduce the Project's construction related emissions. These measures would be implemented as part of the recreation mitigation activities and additional contractor use areas and would reduce emissions associated with the Proposed Action. Greenhouse gas-related mitigation measures were modified slightly from the 2019 EIS/R to add clarity to the measures. As described in Table 1, the Proposed Action includes the implementation of SEIR-GHG-1, which include onsite requirements to reduce construction-related greenhouse gas emissions, and SEIR-GHG-2, which requires the purchase of carbon offsets sufficient to ensure the Project's construction-related greenhouse gas emissions remain below applicable thresholds.

Given the implementation of the mitigation measures, the Project would not exceed SJVAPCD thresholds of significance and would not conflict with or obstruct implementation of the SJVAPD's air quality or greenhouse gas emission reduction plans. Further, the operational criteria air pollutant emissions and greenhouse gas emissions do not exceed applicable SJVAPCD thresholds. Therefore, Reclamation does not anticipate implementation of the Proposed Action to change the Project's expected impacts to air quality or greenhouse gases.

3.3 Flood Protection

3.3.1 Affected Environment

Chapter 3.4 of the Supplemental EIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.3.2 Environmental Consequences

No Action Alternative

As described in Chapter 9 of the 2019 EIS/R, Project construction may impact flood protection thorough the placement of structures in the 100-year flood hazard area, which may impede or redirect flood flows, and could increase exposure of people or structures to an unacceptable risk of loss, injury or death involving flooding. Further, construction and operation could alter the existing drainage pattern and/or the creation of runoff water that would exceed capacity of the existing or planned stormwater drainage system. Following completion of construction, the Project is expected to reduce the exposure of people or structures to an unacceptable risk of loss, injury or death involving flooding, as the result of the failure of the dam due to a seismic event.

As summarized above in Section 3.1.2, Project activities would be completed in accordance with a NPDES General Construction Permit, including the implementation of a SWPPP, construction BMPs, and monitoring efforts. Implementation of these measures will reduce the Project's potential impacts to flood protection.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R.

Proposed Action

Chapter 3.4.4 of the SEIR describes potential impacts of the Proposed Action on flood protection, including alteration of the existing drainage pattern of the site or increase in changes to the rate or amount of surface runoff in a manner which would result in flooding, and the creation or contribution of runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and the exposure of people or structures to risk from flooding. This text, summarized here, is incorporated by reference.

Specifically, vegetation removal and grading at the additional recreation mitigation areas, contractor use area, and dike improvement area could alter drainage patterns and could result in the rate or amount of runoff. Project activities in Borrow Areas 12 and 14, would alter the drainage patterns during construction because of the removal of soil and bedrock. Consistent with the overall project, in compliance with Construction General Permit requirements, a

SWPPP would establish erosion and sediment controls for construction activities, minimizing the potential for flooding associated with Project construction. Following construction, project sites would be revegetated and topography at Borrow Areas 12 and 14 would be established similar to existing slope gradients, resulting in stormwater runoff similar to existing volumes and velocities.

Some northern portions of Borrow Areas 12 and 14 and the southern tip of SLCDUA are within the B.F. Sisk Dam inundation zone, which may increase exposure of people or structures to risk from flooding, especially during dam embankment removal activities. However, the construction schedule is timed such that dam embankment removal is to occur during periods of the year with lower reservoir levels to avoid storage capacity conflicts. Therefore, the exposure of people or structure to risk from flooding is not anticipated to increase due to the Proposed Action.

Further, some paving would occur in the campground construction area and the SLCDUA, causing small increases to the amount of impervious area. Stormwater runoff from these areas would be directed in the O'Neill Forebay due to the site's slope, where the increased runoff would be inconsequential relative to the size of the O'Neill Forebay. The use of low impact design features and BMPs during campground design, as described in Chapter 3.1 of the SEIR, would reduce long-term increases in stormwater runoff within the campground construction and SLCDUA areas. The minor increases to runoff are not expected to exceed capacity of any stormwater drainage systems, given the site conditions and Project design.

Therefore, Reclamation does not expect the Proposed Action to change the Project's expected impacts to flood protection from those described in the 2019 EIS/R.

3.4 Visual Resources

3.4.1 Affected Environment

Chapter 3.5.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.4.2 Environmental Consequences

No Action Alternative

As described in Chapter 10 of the 2019 EIS/R, the Project may affect a scenic vista, degrade the existing visual character or quality of the site and its surroundings, or damage scenic resources within a State scenic highway corridor. Further, construction may create a new source of substantial light or glare which could adversely affect day or nighttime views. Following construction, the modified dam and borrow areas would be modified, changing the visual landscape in the project area. Natural weathering of the new material is expected to fade the modifications and largely return the character of the site to pre-Project conditions.

The Project includes mitigation measure VIS-1, which involves the implementation of light and glare reduction measures, while ensuring Project construction activities meet safety and security standards.

Under the No Action Alternative, no additional impacts to visual resources would occur beyond those described in the 2019 EIS/R.

Proposed Action

Chapter 3.5.4 of the SEIR details expected impacts of the Proposed Action on visual resources. This text, summarized here, is incorporated by reference. The project modifications have the potential to impact visual resources by creating a new source of light or glare, which may adversely affect daytime or nighttime views in the area, during construction in the recreation mitigation areas, additional contractor use areas, and additional dike improvement area. Consistent with overall Project, mitigation measure VIS-1 would be implemented as part of the Proposed Action, requiring the implementation of light and glare reduction measures.

Additionally, operation of the new campground would alter views within a small portion of San Luis Reservoir and Central Valley landscape in the SLRSRA. However, the vegetative and land use patterns would remain consistent with other recreation facilities throughout the SLRSRA.

Therefore, Reclamation does not expect the Proposed Action to change the Project's expected impacts to visual resources from those described in the 2019 EIS/R.

3.5 Noise & Vibrations

3.5.1 Affected Environment

Chapter 3.6.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.5.2 Environmental Consequences

No Action Alternative

Chapter 11 of the 2019 EIS/R describes the Project's anticipated noise impacts, including construction-related exposure of sensitive receptors to noise levels in excess of standards established in the local general plan or noise ordinance, construction-related exposure of sensitive receptors to excessive ground-borne vibration or ground-borne noise, and construction-related substantial temporary increase in ambient noise levels in the project vicinity above levels existing without the project.⁶

The Project design includes several measures to reduce impacts to noise and vibrations associated with construction activities, as described in the 2019 ROD. Mitigation measure NOI-1 includes the development and implementation of a noise control plan, including measures for predicting noise levels at sensitive receptors and reduction measures to minimize construction noises, and mitigation measure NOI-2 includes the preparation and implementation of a blasting control plan. Under mitigation measure NOI-3, a noise monitoring program will be implemented during construction to assess any increases in noise level that may exceed local noise ordinances. Implementation of these mitigation measures will reduce the severity of the Project's noise

⁶ The 2019 EIS/R also described expected impacts to San Luis Reservoir Seaplane Base, which has subsequently been decommissioned. Therefore, these impacts are no longer relevant to the Project.

impacts; however, as described in the 2019 EIS/R and ROD the Project is expected to have significant noise impacts.

Under the No Action Alternative, no additional impacts to noise and vibrations would occur beyond those described in the 2019 EIS/R.

Proposed Action

Chapter 3.6.4 of the SEIR details the Proposed Action's expected impacts to noise and vibrations. This text, summarized here, is incorporated by reference. Consistent with the overall Project, additional construction-related noise would result in temporary increases in ambient noise levels that may exceed thresholds designated in the Merced County General Plan. The noise levels associated with recreation mitigation activities and activities at Borrow Areas 12 and 14 would comply with Merced County requirements. Activities in the additional contractor work areas would comply with Merced County thresholds for daytime increase above the ambient level but could exceed the nighttime criteria before mitigation. Implementation of mitigation measures NOISE-1, NOISE-2, and NOISE-3, through the preparation and implementation of a noise control plan, a blasting control plan, and a noise monitoring program, are expected to reduce construction-based noise impacts.

During site preparation, grading, and construction activities in the additional Project sites, heavy-duty construction equipment would generate ground-borne vibrations. However, given the expected level of equipment use and distance to sensitive receptors, this level is expected to be attenuated to an unperceivable level.

Further, the expected increase in recreation associated with long-term operation of the campground and improved SLCDUA facilities may increase ambient noise levels in the Project area from increased recreational vehicles and watercrafts. Based on the expected type and location of noise sources, the sound levels are expected to attenuate to levels at or below the existing ambient noise environment.

Therefore, Reclamation does not anticipate the Project's anticipated impacts to noise and vibrations to change because of the Proposed Action. The Project is still expected to have significant noise impacts.

3.6 Traffic and Transportation

3.6.1 Affected Environment

Chapter 3.7 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.6.2 Environmental Consequences

No Action Alternative

Chapter 12 of the 2019 EIS/R describes the Project's expected impacts to traffic and transportation, including construction-related temporary increases in traffic that may result in substantial degradation of roadway level of service, construction-related increase in traffic hazards due to a design feature or incompatible use, construction-related reductions in capacity,

availability, or performance of public transit and non-motorized transportation, and conflict with any programs regarding public transit, bicycle, or pedestrian facilities, and construction-related inadequate emergency access. No operational impacts are expected to traffic and transportation following the conclusion of construction activities.

The Project design includes mitigation measures TR-1, which requires the contractor to develop a construction traffic control plan, subject to California Department of Transportation review and approval during the Encroachment Permit process, and a health and safety plan including identification of emergency access routes to be kept clear at all times, including coordination with emergency service personnel. The implementation of measure TR-1 will reduce construction-related impacts to traffic and transportation within the Project area.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

As described in Chapter 3.7.4 of the SEIR, additional construction activities associated with the Proposed Action could affect traffic and transportation. This text, summarized here, is incorporated by reference. Specifically, the Proposed Action may temporarily increase vehicle travel to the campground construction area, including all relevant components to the circulation system; 268 additional construction-related daily trips are expected for the duration of construction at the recreation mitigation areas. However, these additional trips are not expected to cause the Project to alter the level of service at the nearby I-5 at SR-152 junction, SR-152 at I-5 junction, SR-152 at SR-33 junction, SR-33 at I-5 west junction, or the Basalt Road at SR-152 junction. Borrow Areas 12 and 14 are within the Project area considered in the 2019 EIS/R and no additional vehicle trips are expected with use of the areas for borrow; these additional activities are not expected to affect traffic and transportation for the overall Project. Activities associated with the additional contractor use areas are expected to generate a temporary minor increase in vehicular travel to these areas but are not expected to change the level of service. Further, increased construction traffic, new roads constructed as part of the Proposed Action and the construction of new asphalt and resurfacing of the campground access road and parking lot could increase hazards between construction equipment and visitors. Lastly, the increased traffic associated with the Proposed Action could impede emergency access to some areas within the SLRSRA, including the reservoir, dam, and the O'Neill Forebay.

Consistent with the overall Project, the development and implementation of a construction traffic control plan and a health and safety plan through mitigation measure TR-1 would reduce the Project's impact to traffic and transportation in the Project area during construction activities.

Operation of the campground and the facility improvements to SLCDUA are expected to increase vehicle traffic into and out of the recreation facilities; however, this increase is expected to be nominal, and would not change the level of service of the existing roads. Operation of the campground and improved SLCDUA facilities are not expected to change the level of service on the nearby portions of I-5, SR-152, or SR-33.

Therefore, Reclamation does not expect the Proposed Action to change the Project's expected impacts to traffic and transportation from those described in the 2019 EIS/R.

3.7 Hazards and Hazardous Materials

3.7.1 Affected Environment

Chapter 3.8 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.7.2 Environmental Consequences

No Action Alternative

As described in Chapter 13 of the 2019 EIS/R, construction activities may impact hazards and hazardous material. During construction activities, the transport, use or disposal of hazardous materials could increase the risk of exposure from hazardous materials to the public and construction workers, and there is potential to encounter contaminated soil and/or groundwater, which could result in an accidental release of hazardous materials and pose a threat to the public and the environment. Further, construction-related use of Basalt Road and SR-152 for site access could temporarily interfere with an emergency response plan or emergency evacuation plan for the State Responsibility Area, and the use of mechanical equipment may increase the risk of wildfire within the vicinity of the project area.⁷

The Project includes several measures to reduce potential construction-related impacts to hazards and hazardous materials, as described in the 2019 ROD. Mitigation measure HAZ-1 requires the contractor to establish a Spill Prevention and Response Plan, Fire Prevention Plan, and coordinate with State Parks and the CVRWQCB to prevent hazardous soil contamination from the SLRSRA Leaking Underground Storage Tank cleanup site. HAZ-2 requires the contractor to prepare a construction safety plan prior to the commencement of construction activities. HAZ-4 includes measures to reduce the potential for fire-related impacts during construction, including the use of spark arrestors on all construction equipment, worker education programs about the risk of wildfires, and restrictions on smoking and campfires. These measures will reduce potential Project-related impacts to hazards and hazardous materials.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

Additional activities completed under the Proposed Action have the potential to increase Project-related impacts to hazards and hazardous materials, as discussed in Chapter 3.8.4 of the SEIR. This text, summarized here, is incorporated by reference.

Additional construction activities associated with the Proposed Action, including the recreation mitigation activities, activities at the additional contractor use area, and the additional activities

⁷ The 2019 EIS/R also described that construction activities could conflict with seaplane maneuvers on San Luis Reservoir and operations at the San Luis Reservoir Seaplane Base, resulting in safety hazards for pilots and people working and residing in the area. The San Luis Reservoir Seaplane Base is no longer operational; therefore, further impacts are not expected to result from the project modifications described here.

associated with using Borrow Areas 12 and 14 for borrow, would increase the Project's potential hazards and hazardous material impacts through increased transport, use, and disposal of hazardous materials used for construction. Heat or sparks from construction-related equipment and vehicles also have the potential to ignite adjacent vegetation and start a fire, especially during low humidity and high-wind weather events. However, these increases are minor compared to the overall Project. Further, mitigation measures HAZ-1, HAZ-2, and HAZ-4 would be included, minimizing the risk of hazardous material spills or wildfire ignition from these additional activities.

No additional lane closures are expected from the Proposed Action. However, additional construction-related traffic on SR-152, Basalt Road, and within SLRSRA, may temporarily interfere with an emergency response plan or emergency evacuation plan. Consistent with the overall Project, mitigation measure TR-1, which requires the development and implementation of a construction traffic control plan, is expected to reduce traffic impacts associated with the construction activities and reduce the risk of interference with emergency response or evacuation.

Further, the operation of the campground and improved SLCDUA facilities has the potential to increase risk from maintenance-related hazardous material spills or wildfires. Two additional mitigation measures would be implemented as part of the Proposed Action, both pertaining to the recreation mitigation activities. SEIR-HAZ-1 requires the use of firesafe maintenance practices during operation of the campground, and SEIR-HAZ-2 requires modification of campground operations during high fire hazards to reduce potential for wildfire ignitions.

Therefore, Reclamation does not expect the Proposed Action to change the Project's expected impacts to hazards and hazardous materials from those described in the 2019 EIS/R.

3.8 Biological (Terrestrial) Resources

3.8.1 Affected Environment

Chapter 3.9.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.8.2 Environmental Consequences

No Action Alternative

Chapter 15 of the 2019 EIS/R identifies potential impacts to biological resources from the Project: Construction activities could destroy or adversely affect special-status natural communities including wetland and riparian vegetation communities; Construction activities could kill, harm, or disturb terrestrial wildlife, including special-status species, or their habitats; Construction activities could disturb nesting migratory birds, including raptors; Construction activities could destroy or adversely affect special-status plant species; Construction activities could adversely affect wildlife corridors; Construction activities could reduce foraging habitat for golden eagles and California condors at the San Luis Reservoir; and Operations could result in long-term impacts to terrestrial resources.

The Project includes sixteen mitigation measures to reduce impacts to biological resources, as detailed in the 2019 EIS/R and ROD. The measures include TERR-1, which includes measures to protect special-status plant species and special-status natural communities, TERR-2, which includes measures to reduce impacts to the Valley elderberry longhorn beetle, TERR-3, which includes measures to reduce impacts to special-status amphibians, TERR-4 which includes measures to protect the Western pond turtle, TERR-5 which includes measures to reduce impacts to the San Joaquin whipsnake, TERR-6 which includes nesting bird surveys, TERR-7 which includes measures to reduce impacts to Swainson's hawk, TERR-8 which includes measures to reduce impacts to bald eagles, golden eagles, and the California condor, TERR-9 which includes measures to protect burrowing owls, TERR-10 which includes measures to protect the tricolored blackbird, TERR-11 which includes measures to protect special-status bats, TERR-12 which includes measures to reduce impacts to the San Joaquin kit fox, TERR-13 which includes measures to protect the American badger, TERR-14 which includes measures to reduce impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp, TERR-15 which includes contractor environmental awareness training and site protection measures, and TERR-16 which includes measures to reduce impacts to special-status communities including jurisdictional wetlands or waters of the US. Beyond these mitigation measures, Reclamation and DWR will ensure the completion of compensatory mitigation activities pursuant to biological species consultation and permits including Clean Water Act Sections 401 and 404, the Endangered Species Act, and the California Endangered Species Act.

These mitigation measures are expected to reduce the Project's impacts to biological resources.

Proposed Action

Chapter 3.9.4 of the SEIR describes the expected impacts to biological resources from the Proposed Action. This text is incorporated by reference and summarized here.

Completing work on the additional Project areas, including the recreation mitigation areas and the additional contractor use areas, would impact approximately 100 additional acres of annual grassland habitat and associated vegetation communities. Construction activities in these areas, as well as the additional activities in Borrow Areas 12 and 14, has the potential to directly injure or kill individual animals if present within the Project areas, or indirectly impact biological resources through nighttime lighting, noise and vibrations, increased human presence, vehicle strikes, and trash and food items at construction sites. Further, the Proposed Action would temporarily preclude or deter wildlife movement through some areas during construction. However, these impacts are expected to be temporary, and minimized by the implementation of mitigation measures, as described below. The additional Project areas do not contain any waters of the US but do contain some CDFW-jurisdictional waters. The Project design includes appropriate compensatory mitigation efforts to reduce overall impacts to aquatic resources.

The 36.95-acre campground area would be permanently lost as habitat due to the continued operation of the campground facility. However, the surrounding areas contain large amounts of similar quality habitat for species and appropriate compensatory mitigation activities would be completed in coordination with USFWS and CDFW.

Mitigation measures specific to biological resources, outlined above, have been modified slightly from the description in the 2019 EIS/R and ROD. As detailed in Table 1, the Project design still includes mitigation measures to reduce impacts to biological resources: TERR-1, TERR-6, TERR-7, TERR-10, TERR-11, TERR-13, TERR-15, SEIR-BIO-1, SEIR-BIO-2, SEIR-BIO-3, SEIR-BIO-4, SEIR-BIO-5, SEIR-BIO-6, and SEIR-BIO-7, would reduce the Project's impacts to biological resources. Further, Reclamation reinitiated consultation under Section 7 of the Endangered Species Act on December 29, 2020 to address the proposed modifications to the Project. USFWS issued an amended Biological Opinion for the Project, including project modifications analyzed here, on June 3, 2021. DWR has also applied for an Incidental Take Permit pursuant to the California Endangered Species Act.

Given the nature of the overall Project and the Proposed Action, the implementation of mitigation measures and compensatory mitigation activities, and the consultations with USFWS and CDFW, Reclamation does not anticipate the Proposed Action to cause impacts to biological resources beyond those disclosed in the 2019 EIS/R.

3.9 Land Use

3.9.1 Affected Environment

Chapter 3.10.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.9.2 Environmental Consequences

No Action Alternative

As described in Chapter 17 of the 2019 EIS/R, construction activities associated with the Project could affect land use around San Luis Reservoir by physically dividing a community, and could affect land use by conflicting with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Specifically, the Project areas at SLRSRA, managed in coordination between Reclamation, DWR, State Parks, and CDFW, are managed in compliance with the SLRSRA RMP/GP. There would be temporary impacts to recreation, wildlife preservation, and open space uses of the SLRSRA. No operational impacts are expected following completion of construction.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

As described in Chapter 3.10.4 of the SEIR, the Proposed Action may impact land use in the region through construction or operational related conflicts with applicable land use plans, policies, or regulation. This text, summarized here, is incorporated by reference.

The construction and operation of the campground and SLCDUA improvements would be carried out consistent with the policies in the SLRSRA RMP/GP so they would not conflict with applicable land use plans. The operation of recreation facilities is consistent with the recreation use of the SLRSRA so it would not result in long-term impacts to land use in the Project area.

Construction activities in the additional contractor use areas, the additional dike improvement area, and additional activities in Borrow Areas 12 and 14 would result in temporary construction effects to recreational, wildlife preservation, and open space uses of the SLRSRA, consistent with the overall Project as analyzed in the 2019 EIS/R. However, these impacts would be temporary in nature and would not conflict with the policies of the SLRSRA RMP/GP.

Therefore, Reclamation does not anticipate any additional impacts to land use from the Proposed Action.

3.10 Recreation

3.10.1 Affected Environment

Chapter 3.11.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.10.2 Environmental Consequences

No Action Alternative

Chapter 19 of the 2019 EIS/R describes the anticipated effects to recreation, including reduction of recreational use of trails, temporary closure of recreation facilities resulting in a loss of recreation opportunities, and displacement of visitors that may contribute to overcrowded conditions at other local and regional sites. Additionally, operational changes to water levels may affect recreational use of recreational water bodies.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

As described in Chapter 3.11.4 of the SEIR, the Proposed Action has the potential to affect access to recreation. This text, summarized here, is incorporated by reference.

Construction of the new campground and improvements to the SLCDUA would generate a temporary increase in traffic and could result in minor and temporary construction-related impacts to the SLCDUA through fugitive dust, noise, disruption to visitor circulation, and restriction to recreation areas. However, these impacts would be temporary in duration and would result in longer-term improvements to recreation opportunities within the SLRSRA.

The additional contractor use area and dike improvement areas would not trigger additional road or lane closures, nor additional trail or facility closures. All recreation facilities within and nearby to Borrow Areas 12 and 14 (including Basalt Campground, Basalt Campground Trail and Lone Oak Trail) were expected to be closed for the duration of Project construction in the 2019 EIS/R; the change in borrow area locations would not result in any additional construction impacts to recreation areas.

Therefore, Reclamation does not expect the Proposed Action to change the expected impacts of the Project on recreation.

3.11 Cultural Resources

3.11.1 Affected Environment

Chapters 3.12 and 3.14 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.11.2 Environmental Consequences

No Action Alternative

The 2019 EIS/R describes potential impacts to cultural resources associated with the Project—specifically, Project implementation could lead to adverse effects/significant impacts to historic properties and/or historical resources. Partial cultural resources inventory of the Project was conducted under the Programmatic Agreement (PA) executed in September 2019 titled *Programmatic Agreement Among The Bureau of Reclamation, Interior Region 10 California-Great Basin; and The California State Historic Preservation Officer Regarding Compliance with Section 106 of the National Historic Preservation Act Pertaining to the Implementation of the Safety of Dams B.F. Sisk Dam Project*. Reclamation identified one National Register of Historic Places (National Register) eligible property, the B.F. Sisk Dam/San Luis Reservoir Historic District (District) within the project area. Several contributing properties to the District were also identified within the project area, including the B.F. Sisk Dam, San Luis Reservoir, Gianelli Pumping-Generating Plant, the San Luis Operations and Maintenance Center, and the O’Neill Dam, Forebay, Pumping-Generating Plant. Reclamation applied the criteria of adverse effect to historic properties and determined a preliminary finding of no adverse effect to historic properties pursuant to 36 CFR § 800.5(b). Reclamation consulted with SHPO on these findings and the SHPO concurred with Reclamation’s eligibility determinations and preliminary finding of effect on April 29, 2021 (BUR_2019_0408_001).

Proposed Action

As described in Chapter 3.12 of the SEIR, the Proposed Action, including newly identified areas, may have the potential to affect historic properties within the project area. Supplemental cultural resources inventory was conducted, which included a supplemental records search, field inventory, and additional cultural resources inventory reporting. No previously unrecorded cultural resources were identified during the supplemental cultural resources inventory. Reclamation is currently consulting on the supplemental cultural resources inventory and will confirm the no adverse effect finding under the PA with consulting parties and the SHPO.

The additional contractor use area, dike improvement areas, use of Borrow Areas 12 and 14, construction of the new campground, and improvements to the SLCDUA will not result in any additional impacts to known historic properties.

Therefore, Reclamation does not expect the Proposed Action to change the expected impacts of the Project on cultural resources.

3.11.3 Executive Order 13007

Reclamation has previously consulted with federally recognized tribes on cultural resources eligible for the National Register, including sites of a sacred nature, with consultations sent in November 2017, March 2019, and August 2019 on actions related to the SOD Project. A

consultation for the entire project was sent on June 16, 2021. No sacred sites have been identified as a result of these consultations. Consultations under Executive Order 13007 are ongoing.

3.11.4 Native American Graves Protection and Repatriation Act (NAGPRA)

During pre-construction geotechnical investigations, an inadvertent discovery was made in June 2020 that required consultation with tribes under NAGPRA. Reclamation conducted consultations with the Yokut NAGPRA Coalition (Coalition) which includes the Picayune Rancheria of Chukchansi, the Santa Rosa Tachi Yokut, the Table Mountain Rancheria, the Tejon Indian Tribe, and the Tule River Indian Tribe. In consultation with the Coalition, Reclamation officials determined that, pursuant to 43 CFR 10.6 (a), the geographical and historical evidence for the determination of custody demonstrates that the Yokut tribes are aboriginal to the land from which the human remains were discovered. Disposition of the remains to the Santa Rosa Tachi Yokut was completed in late 2020. A Plan of Action has been implemented with the Coalition to assist with compliance with NAGPRA on any future discoveries related to the project on federal land.

3.12 Geology, Seismicity and Soils

3.12.1 Affected Environment

Chapter 3.13.1 of the SEIR provides an updated description of the existing conditions of the affected environment, including the additional areas included as part of the project modifications. The text is incorporated by reference.

3.12.2 Environmental Consequences

No Action Alternative

Chapter 25 of the 2019 EIS/R describes anticipated impacts associated with the Project: construction activities could expose people or structures to adverse effects related to the rupture of a known earthquake fault; construction activities on unstable soils could result in the risk of loss, injury, or death as a result of liquefaction or landslides; construction activities could take place on expansive soils creating a substantial risk to life or property; and construction activities could result in the loss of availability of a known mineral resource of regional or local importance.

Following Project construction, beneficial impacts are expected associated with the improvements to dam safety: maintenance activities during operations could expose people or structures to adverse effects related to the rupture of a known earthquake fault; and seismic related ground failure could impact operation of alternative facilities.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

Chapter 3.6.3 of the SEIR describes expected impacts of the Proposed Action on geology, seismicity, and soils. This text, summarized here, is incorporated by reference. The recreation facilities constructed under the Proposed Action could increase risk to people or structures to known risks, based on seismic ground shaking, seismic-related ground failure, or landslides by establishing amenities for recreation in a seismically active region of California. However, the

facilities would be constructed in accordance with the California Building Code. Further, construction, operation, and maintenance activities would not cause, directly or indirectly, adverse effects associated with seismic ground shaking, ground failure, or landslides. The soil and bedrock extraction activities in Borrow Areas 12 and 14, including extraction, grading, and restoration, are not expected to increase the risk seismic activity in the Project area. Following construction, the site would be stabilized and graded in accordance with California Building Code and the SLRSRA RMP/GP.

Construction activities associated with the creation of the campground, improvements to SLCDUA facilities, and development of the contractor use areas, including grading and open trenching would produce exposed soils that could be susceptible to weather or vehicular travel erosion. Additionally, the extraction and stockpile of soils in Borrow Areas 12 and 14 could increase erosion due to rain, wind, or construction-related vehicle travel. Consistent with the overall Project, and as described in Section 3.1.2, a SWPPP would be developed and implemented, establishing erosion and sediment control BMPs. Implementation of BMPs would reduce potential impacts to soil erosion.

Material extraction in Borrow Areas 12 and 14 could impact a known mineral resource of value to the region. However, there is no known demand for materials besides the Project, so no permanent loss of availability of a known mineral resource of future value is expected.

Therefore, Reclamation does not anticipate any additional adverse impacts to geology, seismicity, and soils from the Proposed Action.

3.13 Indian Trust Assets

Indian Trust Assets are defined as legal interests in property held in trust by the U.S. government for Indian tribes or individuals, or property protected under U.S. law for Indian tribes or individuals. Pursuant to the April 29, 1994 memorandum “Government-to-Government Relations with Native American Tribal Governments” and Secretarial Order 3215 *Principles for the Discharge of the Secretary’s Trust Responsibility*, the Bureau of Reclamation is responsible for assessing the Project’s effect on ITAs.

As described in the 2019 EIS/R, there are no Indian Trust Assets within or adjacent to the 2019 project area. The additional project areas that would be incorporated into the Project area under the project modifications do not contain any Indian Trust Assets. Therefore, the Project would not impact Indian Trust Assets under either the No Action Alternative or the Proposed Action Alternative.

3.14 Regional Economics

3.14.1 Affected Environment

Chapter 26 of the 2019 EIS/R describes potential Project impacts to regional economics. that may be affected by the Project. The text is incorporated by reference.

3.14.2 Environmental Consequences

No Action Alternative

Chapter 26 of the 2019 EIS/R describes potential Project impacts to regional economics, including temporary adverse impacts associated with changes in recreation opportunities in Merced County, changes with water supply to Central Valley Project municipal and industrial water contractors in the Bay Area Region, and changes in water supply to Central Valley Project agricultural water users in the San Joaquin Valley, and associated economic impacts. Additionally, construction and operation and maintenance expenditures could increase employment, income, and output in the regional economy.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

Reclamation does not anticipate any additional impacts to regional economics from the Proposed Action. Therefore, there would not be any additional impacts to regional economics beyond those described in the 2019 EIS/R.

3.15 Environmental Justice

3.15.1 Affected Environment

Chapter 20 of the 2019 EIS/R describes the populations that may be affected by the Project. The text is incorporated by reference.

3.15.2 Environmental Consequences

No Action Alternative

The 2019 EIS/R describes that the Project may result in a potential adverse effect on minority populations, but these effects are not expected to be disproportionately high.

Under the No Action Alternative, no additional impacts would occur beyond those described in the 2019 EIS/R and summarized here.

Proposed Action

Reclamation does not anticipate any additional impacts to local populations from the Proposed Action. Therefore, there would not be any additional environmental justice impacts beyond those described in the 2019 EIS/R.

5. Consultation and Coordination

5.1 Agencies and Persons Consulted

Reclamation consulted with DWR, State Parks, the U.S. Army Corps of Engineers, and the USFWS in the preparation of this environmental assessment.

5.2 Endangered Species Act

On August 29, 2019, the U.S. Fish and Wildlife Service issued a Biological Opinion reviewing the original project's expected impacts on species that are federally listed under the Endangered Species Act. Reclamation and USFWS determined that the original project may affect, and is likely to adversely affect the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the federally-listed as threatened California tiger salamander Central California Distinct

Population Segment (*Ambystoma californiense*), and the federally-listed as threatened California red-legged frog (*Rana draytonii*). The project was determined to have no adverse effect to critical habitat and the anticipated level of take is not likely to result in jeopardy in any of the three affected species.

Reclamation reinitiated consultation under Section 7 of the Endangered Species Act on December 29, 2020 to address the proposed modifications to the Project. USFWS issued an amended Biological Opinion for the Project, including project modifications analyzed here, on June 3, 2021.

5.3 National Historic Preservation Act

Under Section 106 of the NHPA, Federal agencies must consider effects to eligible resources (“historic properties”) from the proposed undertaking, affording the Advisory Council a reasonable opportunity to comment on such undertakings. This involves consultation with SHPO and other parties. This includes identification of cultural resources eligible for the National Register, assessment of adverse effects to eligible properties, and resolution of adverse effects. The implementing regulations at 36 CFR Part 800 define procedures to meet Section 106 responsibilities through consultation among the Federal agency and other parties with an interest in the effects on historic properties.

NHPA Section 106 defines significant archaeological or historical resources as those which are listed on, or eligible for listing on, the National Register. Eligible properties are those that retain sufficient integrity and meet one or more of the following criteria: “(a)...are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history” (36 CFR § 60.4).

As described above in Section 3.11.2, Reclamation is currently consulting on the supplemental cultural resources inventory and will confirm the no adverse effect finding under the PA with consulting parties and the SHPO.

6. Conclusion

Based on the analysis in the SEIR and this Supplemental EA, Reclamation has determined that the proposed modifications to the Project would not alter the effect determinations in the 2019 EIS/R and ROD.

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Appendix A. 2019 EIS/R Mitigation Measures

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
AQ-1	<p>Reduce emissions from off-road construction equipment by using Tier 4 construction equipment</p> <p>Impacts on air quality from construction activities will be reduced by using construction equipment compliant with the Tier 4 emission standards for off-road diesel engines instead of the fleet average for the San Joaquin Valley Air Basin. Records will be maintained by the construction contractor that demonstrate that actual emissions would not exceed the San Joaquin Valley Air Pollution Control District's (SJVAPCD) significance criteria and would be submitted to Reclamation monthly.</p> <p>If NOx emissions are forecasted to exceed thresholds, then changes will be made so that the threshold is not exceeded, or work will be stopped.</p>	Reclamation and DWR	Documentation on file with DWR and Reclamation	Prior to and during construction
AQ-2	<p>Reduce exhaust emissions from on-road trucks</p> <p>All haul trucks, vendor trucks, or other vehicles operating onsite with on-road engines will meet model year 2015 or better emission standards.</p>	Reclamation and DWR	Documentation on file with DWR and Reclamation and field monitor verification	Prior to and during construction
AQ-3	<p>Implement Best Available Mitigation Measures for Construction Phase</p> <p>As required by the SJVAPCD, the project must apply the following best available mitigation measures for the construction phase:</p> <ul style="list-style-type: none"> • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilize of dust emission using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. 	Reclamation and DWR	Documentation on file with DWR and Reclamation and field monitor verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> • When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. <i>(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)</i> • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicles trips per day by vehicles with three or more axles shall implement mitigation measures to prevent carryout and trackout. 			
GHG-1	<p>Reclamation will require the contractor to purchase carbon offsets before construction activities commence in an amount sufficient to reduce greenhouse gas (GHG) emissions to less than significant levels using DWR significance thresholds; a minimum of 120,575 metric tons carbon dioxide equivalent (MTCO_{2e}) would be required to reduce emissions below the project-level significance threshold. Only emission offsets generated as part of California Air Resources Board's (CARB's) Compliance Offset Protocols (developed for the Assembly Bill 32 cap-and-trade program) may be used to reduce GHG emissions. These protocols assure that offsets are real, permanent, quantifiable, verifiable, enforceable, and additional (Health and Safety Code Section 38562(d)). Registries selling approved offsets include the American Carbon Registry, the Climate Action Reserve, and the Verified Carbon Standard.</p>	Reclamation and DWR	Documentation on file with DWR and Reclamation	Prior to construction
VIS-1	<p>To reduce visual intrusion from light sources, Reclamation shall require the contractors to implement measures to reduce light and glare while meeting minimum safety and security standards. Light reduction measures must include: directing lighting downward to prevent spillover onto nearby areas, utilization of lighting fixtures with directional shielding to focus on areas being lit, and a construction requirement that all lighting in areas not under active construction be shut off. To reduce the amount of glare, building finishes shall be subdued and earth-toned. Onsite mechanical equipment roofing materials, and any exposed vents or flashings must be constructed of non-glare finishes that minimizes reflectivity.</p>	Reclamation and DWR	Field monitor verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
NOI-1	<p>A Noise Control Plan (NCP) will be developed by the construction contractor prior to the start of any construction activities to address increased noise levels as a result of the proposed project and alternatives. The NCP will identify the procedures for predicting construction noise levels at sensitive receptors and will describe the reduction measures required to minimize construction noise. The noise mitigation measures in the NCP will include, but are not limited to:</p> <ul style="list-style-type: none"> • Appropriate level of sound attenuation will be used or constructed to minimize noise levels by at least 3 A-weighted decibels (dBA). Potential sound attenuation measures could include, but are not limited to stationary equipment and stockpiles, or otherwise placed between the source(s) of construction noise and noise-sensitive receptors, as appropriate. The feasible measures will be determined by the construction contractor based on an initial evaluation of each construction site. • Contractor will be responsible for maintaining equipment in best possible working condition and outfitting construction equipment with the most effective locally available commercial mufflers or other noise attenuation devices; • When feasible, the loudest construction activities will be conducted during Merced County construction noise exempt hours, between 7 a.m. and 6 p.m.; • Operation of construction equipment between the hours between 6 p.m. and 10 p.m. will be prohibited within 9,100 feet of the Subdivision off State Route (SR) 152. During the hours between 10 p.m. and 6 a.m. the operation of construction equipment will be prohibited within 9,550 feet of the Subdivision off SR 152. • Shutting down equipment that are queued or not in use for 5 minutes or more; • Pre-construction meeting with contractors and project managers to confirm that noise mitigation procedures are in place; • Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems; • The public will be kept informed of the construction hours and days; • List contact information for complaints and respond to noise complaints; and • An on-site complaint and enforcement manager shall respond to and track complaints and questions related to noise. 	Reclamation and DWR	NCP on file with Reclamation and DWR. Field monitor verification	Plan development: prior to construction Plan implementation and monitoring: during construction
NOI-2	<p>A Blasting Plan for construction shall be prepared and followed that includes the following:</p> <ul style="list-style-type: none"> • Identification of blast officer; 	Reclamation and DWR	Blasting Plan on file with Reclamation	Plan development: prior to issuing

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> • Scaled drawings of blast locations, and neighboring buildings, streets, or other locations which could be inhabited; • Blasting notification procedures, lead times, and list of those notified. Public notification to potentially affected vibration and nuisance noise receptors describing the expected extent and duration of the blasting; • Description of means for transportation and on-site storage and security of explosives in accordance with local, State and Federal regulations; • Minimum acceptable weather conditions for blasting and safety provisions for potential stray current (if electric detonation); • Traffic control standards and traffic safety measures (if applicable); • Required personal protective equipment; • Minimum standoff distances and description of blast impact zones and procedures for clearing and controlling access to blast danger; • Procedures for handling, setting, wiring, and firing explosives; and procedures for handling misfires per Federal code; • Type and quantity of explosives and description of detonation device. • Methods of matting or covering of blast area to prevent flyrock and excessive air blast pressure; • Description of blast vibration and air blast monitoring programs; • Dust control measures in compliance with applicable air pollution control regulations (to interface with general construction dust control plan); • Emergency Action Plan to provide emergency telephone numbers and directions to medical facilities. Procedures for action in the event of injury; • Material Safety Data Sheets for each explosive or other hazardous materials to be used; • Evidence of licensing, experience, qualifications of blasters, and description of insurance for the blasting work • A sound attenuation plan shall be prepared outlining sound control measures that would include the use of blasting mats or sound walls; • If vibration results in damage to any nearby structures or utilities, or scenic rock faces, blasting shall immediately cease. The stability of segmental retaining walls, existing slopes, creek canals, etc. shall be monitored and any evidence of instability due to blasting operations shall result in immediate termination of blasting; 		and DWR Field monitor verification	construction contract Plan implementation and monitoring: during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> • Explosive materials shall be delivered in specially built vehicles marked with United Nations (UN) hazardous materials placards. Explosives and detonators shall be delivered in separate vehicles or be separated in compartments meeting Department of Transportation rules within the same vehicle. Vehicles shall have at least two ten-pound Class-A fire extinguishers and all sides of the vehicles display placards displaying the UN Standard hazard code for the onboard explosive materials. Drivers shall have commercial driver licenses with Hazmat endorsements, and drivers shall carry bill-of-lading papers detailing the exact quantities and code dates of transported explosives or detonators; • The contractor must comply with U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) table-of-distance requirements (CFR 27, U.S. Department of Justice, Alcohol, Tobacco, Firearms and Explosives Division Part 555) that restrict explosive quantities based on distance from occupied buildings and public roadways. Employees must also comply with the security requirements of the Safe Explosives Act (Title XI, Subtitle C of Public Law 107-296, Interim Final Rule), implemented in March 2003. These requirements require background checks for all persons that use, handle or have access to explosive materials; and responsible persons on a now required Federal explosives license must submit photographs and fingerprints with the application to ATF. 			
NOI-3	<p>A pre-construction noise survey will be completed during daytime and nighttime periods at multiple locations across the project area, including identified sensitive receptors, to establish background noise levels at those times. During construction, noise will be periodically monitored at these locations to assess any increases in noise levels that exceed the local noise ordinances. If noise levels are recorded exceeding the background noise level by 10 dBA between 6 p.m. and 10 p.m. or by 5 dBA between 10 p.m. and 7 a.m. or if noise complaints are received, an investigation will be conducted to determine the source of the noise. After the investigation, noise will be reduced using all feasible measures, including mitigation at the receiver impacted by the noise. Potential mitigation at the receiver would include building envelope improvements and acoustical window treatments.</p> <p>All mitigation requirements will be included in bid documents and construction contracts.</p>	Reclamation and DWR	Field monitor verification	Survey: prior to construction Implementation and monitoring of noise reducing measures: during construction
TR-1	<p>The following construction management actions will be documented in a temporary traffic control plan developed by the contractor as a requirement that will be included in its construction contract. The temporary traffic control plan will be submitted for California Department of Transportation review and approval during the Encroachment Permit process. Construction contractors shall install signage at intersections identified as</p>	Reclamation and DWR	Field monitor verification and documentation on file with	Traffic Control, and Health and Safety Plan development: Prior to

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>dangerous in accordance with the California Manual on Uniform Traffic Control Devices guidelines warning motorists of slow moving construction traffic and lane closures, including SR 152, Basalt Road, and the Romero Visitor Center access road. Signage shall also be posted at these intersections one month in advance to allow motorists time to plan for delays or alternate routes. Construction contractors shall implement dust abatement and perform proper construction traffic management actions, including signage warning motorists of construction activity and traffic controls like flaggers or temporary traffic lights where construction equipment will be entering roadways, to reduce conflicts during periods of high traffic volume in and around each construction site and to avoid conflicts with emergency responders entering and existing the area during an emergency.</p> <p>In addition to the temporary traffic control plan, prior to the initiation of any construction actions, construction contractors shall develop and adhere to a health and safety plan outlining all applicable Occupational Safety and Health Administration requirements, important traffic safety plans including identification of emergency access routes in and through construction areas that would need to be kept clear at all times during construction. The health and safety plan shall include coordination with emergency service personnel to ensure adequate mitigation for all impacts.</p>		Reclamation and DWR	construction. Implementation and monitoring: during construction
HAZ-1	<p>The construction contractor in coordination with the Lead Agencies shall work with the California Department of Parks and Recreation (CDPR) and the Central Valley Regional Water Quality Control Board (RWQCB) to review existing monitoring data of the San Luis Reservoir State Recreation Area (SRA) Leaking Underground Storage Tank (LUST) Cleanup Site to evaluate the potential for interacting with hazardous soil contamination during construction. If the construction contractor and the Lead Agencies (as the responsible party for this potential disturbance) determine that interaction with contaminated soil cannot be avoided and these construction actions could generate a release of this soil to nearby water bodies or elsewhere offsite, the construction contractor shall prepare a Contaminated Soil/Groundwater Remediation Plan. This remediation plan will detail the nature of the contaminants on site, measures required to avoid interaction with these contaminants including if necessary a pre-construction cleanup of the site, and a response action plan in the event of an inadvertent release of contaminated soils from the construction site. This plan will be submitted to the CDPR and the Central Valley RWQCB for review and approval prior to any construction taking place.</p> <p>In addition, the construction contractor shall also prepare a Spill Prevention and Response Plan for preventing spills and responding to chemical or hazardous substance spills. This plan will include spill prevention management, including employee training, hazardous substance inventory, and spill response equipment. The plan will also include a spill response plan, including evacuation procedures, spill containment and cleanup, and reporting a release.</p>	Reclamation and DWR	Documentation on file with Reclamation and DWR, and field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>Finally, the construction contractor shall prepare a Fire Prevention Plan to prevent a fire from occurring. The plan must include (Occupational Safety and Health Administration 2018):</p> <ul style="list-style-type: none"> • A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard. • Procedures to control accumulations of flammable and combustible waste materials. • Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials. • The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires. • The name or job title of employees responsible for the control of fuel source hazards. 			
HAZ-2	Construction contracts will include requirements for the contractor to prepare a construction safety plan prior to any construction activities in collaboration with seaplane base personnel to coordinate construction activities including: a schedule, coordination of personnel with aviation radios, and notice requirements. Also, consistent with Mitigation Measure TR-1, the contractor shall coordinate with emergency service personnel to ensure adequate mitigation for all impacts.	Reclamation and DWR	Documentation on file with Reclamation, and DWR	Construction Safety Plan development: Prior to construction. Implementation: during construction
HAZ-3	The construction contractor in coordination with the Lead Agencies shall notify the San Luis Seaplane Base administrator when a Notice to Airmen is required to be issued prior to the commencement of construction activities within the seaplane base and when high profile equipment will be used within safety zones.	Reclamation and DWR	Field monitor verification	During construction
HAZ-4	The Lead Agencies will include requirements in all construction contracts requiring the use of spark arrestors on all construction equipment. The contract shall also include requirements for the contractor to educate all construction workers about the risk of starting a wildfire and how to avoid it and who to contact in case a wildfire is started. In addition, restrictions shall be placed on smoking and campfires for any personnel utilizing Basalt Campground.	Reclamation and DWR	Documentation on file with Reclamation and DWR	Prior to and during construction
TERR-1	<p>Special-status Plant Species and Special-Status Natural Communities</p> <p>Surveys of the project area for special-status plant species will be conducted during the identifiable blooming period prior to commencement of work. Special-status plants include: Arcuate bush-mallow (blooms April through September), big-scale balsamroot (blooms March through June), California alkali grass (blooms March through May), chaparral harebell (blooms May through June), Congdon's tarplant (blooms May through October),</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>Hall's bush-mallow (blooms May through September), Hispid bird's beak (blooms June through September), Hospital Canyon larkspur (blooms March through June), Lemmon's jewelflower (blooms February through May), Lime Ridge navarretia (blooms May through June), round-leaved filaree (blooms March through May), shining navarretia (blooms April through July), and spiny-sepaled button-celery (bloom April through June).</p> <p>A qualified DWR biologist (qualified biologist) will be present prior to and during construction to ensure avoidance of impacts on special-status plant species and special-status natural communities by implementing one, or more, of the following, as appropriate, per the biologist's recommendation:</p> <ol style="list-style-type: none"> a. Flag the population or natural community areas to be protected; b. Allow adequate buffers; and/or, c. Time construction or other activities during dormant and/or non-critical life cycle periods. <p>For unavoidable impacts to special-status plant species, compensatory mitigation may be required based on recommendations of the qualified biologist. If any impacts occur to listed plant species, consultation with United States Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) will be initiated. If deemed necessary based on the type and extent of special-status plant populations affected, compensatory mitigation will entail:</p> <ul style="list-style-type: none"> • The protection, through land acquisition or a conservation easement, of a population of equal or greater size and health. Or, • If it is not feasible to acquire and preserve a known population of a special-status plant to be impacted, suitable unoccupied habitat capable of supporting the species will be acquired, and used to create a new population. For population creation, the following considerations will also be met: • Prior to unavoidable and permanent disturbance to a population of a special-status plant species, propagules shall be collected from the population to be disturbed. This may include seed collection or cuttings, and these propagules will be used to establish a new population on suitable, unoccupied habitat as described above. Transplantation may be attempted but will not be used as the primary means of plant salvage and new population creation. • Creation of new populations will require identifying suitable locations and researching and determining appropriate and viable propagation or planting techniques for the species. It will also require field and literature research to determine the appropriate seed sampling techniques and harvest numbers for acquisition of seed from existing populations. 			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> A minimum ten-year monitoring plan with adaptive management will be implemented to document the success of creating new plant populations. Adequate funding for compensatory mitigation will be provided on an agreed-to schedule, following a discussion with the appropriate regulatory agencies, to ensure long-term protection and management of lands acquired or placed under conservation easement. 			
TERR-2	<p>Valley Elderberry Longhorn Beetle Prior to construction, the known stand of more than 25 elderberry shrubs and surrounding areas with suitable elderberry habitat would be surveyed to determine the current number of elderberry shrubs present, their stem diameters, and, if feasible, the presence and number of exit holes formed by valley elderberry longhorn beetle (VELB) as they exit the branch. Surveys are valid for two years.</p> <p>A 100-foot buffer around construction areas would also be surveyed for elderberry shrubs that could be affected by dust from construction. Areas containing elderberry shrubs with stems greater than 1-inch in diameter would be assumed to provide VELB habitat, protected with fencing, and avoided to the extent possible. Consultation with the USFWS through the Section 7 process may be required if shrubs cannot be avoided during construction. If shrubs cannot be avoided, removal measures would be implemented, including transplanting shrubs to a USFWS-approved conservation area, compensating for habitat loss at a ratio ranging from 1:1 to 8:1 depending on the diameter of the impacted elderberry stems and habitat type that they were removed from (riparian or non-riparian), under an Elderberry Mitigation Plan approved by USFWS, or purchasing credits at a USFWS-approved mitigation bank for VELB.</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to construction
TERR-3	<p>Special-Status Amphibians Before and during construction:</p> <ul style="list-style-type: none"> The Proponent shall submit the name and credentials of a DWR biologist qualified to act as construction monitor to USFWS and CDFW for approval at least 15 days before construction work begins. General minimum qualifications are a 4-year degree in biological sciences and experience in surveying, identifying, and handling California tiger salamanders and California red-legged frogs. The qualified biologist shall be present at all times during construction. Consultation with the USFWS through the Section 7 process may be required to determine avoidance, conservation, and mitigation measures. The USFWS and CDFW-approved biologist, under the appropriate Federal and State authorities (e.g. permitting and consultation), shall survey the work sites 2 weeks before the onset of construction. If California tiger salamanders or California red-legged frogs (or their tadpoles or eggs) are found, the approved biologist shall contact 	Reclamation, and DWR	Field verification and documentation on file with Reclamation and DWR.	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>USFWS and CDFW to determine whether moving any of these life-stages is appropriate. If USFWS and CDFW approve moving the animals, the biologist shall be allowed sufficient time to move frogs and/or salamanders from the work sites before work begins. If these species are not identified, construction can proceed at these sites. The biologist shall use professional judgment to determine whether (and if so, when) the California tiger salamanders and/or frogs are to be moved. The biologist shall immediately inform the construction manager that work shall be halted, if necessary, to avert avoidable take of listed species.</p> <ul style="list-style-type: none"> • The known location of California red-legged frogs and Willow Spring, the water source for the perennial frog pond, near the borrow area will be avoided during construction with a buffer of 250 feet to avoid modifying aquatic habitat that supports the frog population; or as otherwise approved by the resource agencies. • Areas impacted by construction will be monitored during construction to identify, capture, and relocate special-status amphibians, if present. • Areas beneath construction equipment and vehicles shall be inspected daily, prior to operation, for presence of special-status amphibians under tracks/tires and within machinery. If special-status amphibians are found a qualified biologist will capture and relocate animals from work sites. • Appropriate State and Federal permits for handling of special-status species will be acquired • If necessary, a detailed amphibian relocation plan will be prepared at least 3 weeks before the start of groundbreaking and submitted to CDFW and USFWS for review. The purpose of the plan is to standardize amphibian relocation methods and relocation sites. • A USFWS and CDFW-approved biologist shall be present at the active work sites until special-status amphibians have been removed, and habitat disturbance has been completed. Thereafter, the contractor shall designate a person to monitor onsite compliance with all minimization measures. A CDFW and USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements. • The project proponent and its contractors shall install frog-exclusion fencing (i.e., silt fences) around all construction areas that are within 100 feet of any identified ponds that provide potential special-status amphibian aquatic breeding habitat. During and after rain events, an approved biologist will monitor work areas for the presence of special-status amphibians. 			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> Reclamation shall provide compensation for permanent and temporary impacts on California tiger salamander and California red-legged frog aquatic habitat. Compensatory mitigation shall be provided for the loss of aquatic breeding sites that will be filled or otherwise directly affected by the project, as well as mitigate for any impacts on associated California red-legged frog upland habitat through compensatory mitigation. If possible, compensatory mitigation areas shall be located within a California red-legged Frog Recovery Area, as identified in the 2002 California Red-legged Frog Recovery Plan (USFWS 2002). The total area, size and number of California red-legged frog or California tiger salamander mitigation ponds to be created will be based on a comparable loss of breeding sites (e.g., a minimum 1:1 replacement ratio) as a result of the project. These ponds shall concurrently satisfy wetland mitigation requirements identified in Mitigation Measure TERR-2. To the degree possible, new mitigation ponds that are created for California red-legged frog and California tiger salamander shall be hydrologically self-sustaining and shall not require a supplemental water supply. 			
TERR-4	<p>Western Pond Turtle Before construction activities begin, a qualified biologist shall conduct western pond turtle surveys within creeks and in other ponded areas affected by the project. Adjacent upland areas shall also be examined for evidence of nests as well as individual turtles. The project biologist shall be responsible for the survey and for the relocation of pond turtles, if found. Construction shall not proceed until a reasonable effort has been made to capture and relocate as many western pond turtles as possible to minimize take. However, some individuals may be undetected or enter sites after surveys and would be subject to injury or mortality. If a nest is observed, a biologist with the appropriate permits and prior approval from CDFW shall move eggs to a suitable location or facility for incubation, and release hatchlings into the creek system the following autumn.</p>	Reclamation, and DWR	Field verification	Prior to construction
TERR-5	<p>San Joaquin Whipsnake Before construction activities begin a qualified biologist shall conduct San Joaquin whipsnake surveys 2 weeks prior to construction activities within work sites and within 100 feet of disturbance areas. A qualified biologist shall relocate any San Joaquin whipsnakes to suitable habitat outside of areas of disturbance. There is possibility of snakes to move into the work sites after pre-construction surveys have checked the area and some individuals could be subject to mortality. If San Joaquin whipsnakes are detected in work sites during construction, activities and equipment travel shall cease in the immediate area of detection until the snake has left work site or has been relocated out of the area by a qualified biologist.</p>	Reclamation, and DWR	Field verification	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
TERR-6	<p>Nesting Bird Surveys A qualified biologist would conduct nesting bird surveys prior to construction and supervise avoidance of nests during construction. The generally accepted nesting season extends from February 1 through September 15. If an active nest of a special-status bird is found, construction within 300 feet of the nest (500 feet for raptor nests, excluding Swainson's hawk) would be postponed until the nest is no longer active.</p>	Reclamation, and DWR	Field verification	Prior to and during construction
TERR-7	<p>Swainson's Hawk Prior to construction, surveys for active Swainson's hawk nests will be conducted in and around all potential nest trees within 0.5 mile of construction areas. If known or active nests are identified through preconstruction surveys or other means, a 0.5 mile no-disturbance buffer shall be established around all active nest sites if construction cannot be limited to occur outside the nesting season (February 15 through September 15). Buffer sizes may be reduced if approved by CDFW and active nest sites are monitored during construction by a qualified biologist. Permanent foraging habitat losses (i.e. grasslands) within one mile of active Swainson's hawk nests shall be compensated by preserving in perpetuity suitable foraging habitat at a ratio of 1:1. This includes permanently disturbed construction sites. The CDFW shall approve the location and types of habitats preserved.</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to and during construction
TERR-8	<p>Bald and Golden Eagles, and California Condor The following measures address potential impacts on nesting eagles in the San Luis Reservoir vicinity. Prior to the initiation of construction, an Eagle Conservation Plan will need to be developed that details eagle protection guidelines specific to the San Luis Reservoir construction area. These protections will include, the initiation of pre-construction surveys by a USFWS-approved biologist for golden eagles and bald eagles initiating approximately two years prior to construction continuing through the construction period. These surveys will be completed across an area at a 5-mile radius from where impacts from the project occur, including construction areas. Any nesting sites identified during these surveys would be mapped and monitored for up to ten years, depending on the monitoring specifications identified within the plan. Whenever feasible, construction near recently active nest sites shall start outside the active nesting season. The nesting period for golden eagles is between January 15 and August 15 and bald eagles nest between January 1 and August 15. If groundbreaking activities begin during the nesting period, a qualified biologist shall perform a preconstruction survey 14 to 30 days before the start of each new construction phase to search for eagle nest sites within two miles of proposed activities. If active nests are not identified, no further action is required and construction may proceed. If active nests are identified, the avoidance guidelines identified below shall be implemented.</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ul style="list-style-type: none"> • For golden and bald eagles, construction contractors shall observe CDFW and USFWS avoidance guidelines, which stipulate a minimum 660 foot to 0.5-mile buffer zone depending upon the visibility and severity of the activity (e.g., earth-moving versus blasting) (USFWS 2007). Buffer zones shall remain until young have fledged. A qualified biologist will monitor the nest daily for one week to determine whether construction activities are disturbing nest behavior. If nest behavior appears normal, then weekly monitoring will continue until the nest is no longer active. If the nest appears disturbed, the biological monitor will increase the no-work buffer at their discretion to ensure normal nesting behavior. For activities conducted with agency approval within this buffer zone, a qualified biologist shall monitor construction activities and the eagle nest(s) to monitor eagle reactions to activities. If activities are deemed to have a negative effect on nesting eagles, the biologist shall immediately inform the construction manager that work should be halted, and CDFW and USFWS will be consulted. • CDFW and USFWS often allow construction activities that are initiated outside the nesting season to continue without cessation even if raptors such as eagles choose to nest within 500 feet of work activities. Thus, work at the dam construction site may continue if approved by CDFW and USFWS and a qualified biologist monitors the nest site during construction. • To compensate for the loss of grassland, which provides suitable foraging habitat for golden eagles and California condors, grasslands shall be enhanced or restored at a minimum ratio of 1:1. Restoration or enhancement of grassland habitat shall be conducted under a USFWS and CDFW-approved restoration/enhancement plan, and may be conducted on lands also used for mitigation for Swainson's hawk and/or San Joaquin kit fox. 			
TERR-9	<p>Burrowing Owl Prior to construction, surveys for burrowing owls would be conducted in areas supporting potentially suitable habitat. Any occupied burrows shall not be disturbed during the breeding season (February 1 through August 31). A minimum 160-foot-wide buffer shall be placed around occupied burrows during the nonbreeding season (September 1 through January 31), and a 250-foot-wide buffer shall be placed around occupied burrows during the breeding season. Ground- disturbing activities shall not occur within the designated buffers.</p> <p>The project proponent shall implement the measures listed below for grassland habitats to avoid incidental take of burrowing owls. In advance of construction, a qualified biologist shall follow the current CDFW burrowing owl survey guidance to evaluate burrowing owl</p>	Reclamation, and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>use. Measures shall apply to all construction activities near active nests or within potential burrowing owl nesting habitat, to avoid, minimize, or mitigate impacts on burrowing owls. Breeding season surveys shall be performed to determine the presence of burrowing owls for the purposes of inventory, monitoring, avoidance of take, and determining appropriate mitigation. In California the breeding season begins as early as February 1 and continues through August 31. Under the Burrowing Owl Consortium's multi-phase survey methodology, for areas within 500 feet of construction boundaries, a biologist shall: 1) perform a habitat assessment to identify essential components of burrowing owl habitat, including artificial nest features; 2) perform intensive burrow surveys in areas that are identified to provide suitable burrowing owl habitat, and; 3) perform at least four appropriately-timed breeding season surveys (four survey visits spread evenly [roughly every 3 weeks] during the peak of the breeding season, from April 15 to July 15) to document habitat use.</p> <p>Pre-construction surveys shall be used to assess the owl presence before site modification is scheduled to begin. Generally, initial pre-construction surveys should be conducted within 7 days, but no more than 30 days prior to ground-disturbing activities. Additional surveys may be required when the initial disturbance is followed by periods of inactivity or the development is phased spatially and/or temporally over the project area. Up to four or more survey visits performed on separate days may be required to assure with a high degree of certainty that site modification and grading will not take owls. The full extent of the pre-construction survey effort shall be described and mapped in detail (e.g., dates, time periods, area[s] covered, and methods employed) in a biological report that will provided for review to CDFW.</p> <p>In addition to the above survey requirements, the following measures shall be implemented to reduce project impacts to burrowing owls:</p> <ul style="list-style-type: none"> • Construction exclusion areas (e.g., orange exclusion fence or signage) shall be established around occupied burrows, where no disturbance shall be allowed. During the nonbreeding season (September 1 through January 31), the exclusion zone shall extend at least 160 feet around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend 250 feet around occupied burrows (or farther if warranted to avoid nest abandonment). • If work or exclusion areas conflict with owl burrows, passive relocation of onsite owls could be implemented as an alternative, but only during the nonbreeding season and only with CDFW approval. The approach to owl relocation and burrow closure will vary depending on the number of occupied burrows. Passive relocation shall be accomplished by installing one-way doors on the entrances of burrows within 160 feet of the project area. The one-way doors shall be left in place for 48 hours to ensure the owls have left the burrow. The burrows shall then be excavated with a qualified 			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>biologist present. Construction shall not proceed until the project area is deemed free of owls.</p> <ul style="list-style-type: none"> • Unoccupied burrows within the immediate construction area shall be excavated using hand tools, and then filled to prevent reoccupation. The qualified biologist will be present during construction to continue examination of burrows. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl shall be allowed to escape. Excavation would be completed when the biological monitor confirms the burrow is empty. • Artificial nesting burrows will be provided as a temporary measure when natural burrows are lacking. To compensate for lost nest burrows, artificial burrows shall be provided outside the 160-foot buffer zone. The alternate burrows shall be monitored daily for 7 days to confirm that the owls have moved in and acclimated to the new burrow. 			
TERR-10	<p>Tricolored Blackbird Prior to construction, appropriately timed surveys for tricolored blackbirds would be conducted in areas supporting potentially suitable habitat within 0.25 mile of construction areas. Habitat within 0.25 mile of tricolored blackbird colonies will be avoided during nesting season, which can begin as early as mid-March and extend through August. If colonies cannot be avoided, CDFW shall be consulted to potentially reduce buffer distances with active monitoring during construction by a qualified biologist.</p>	Reclamation, and DWR	Field verification	Prior to construction
TERR-11	<p>Special-Status Bats Impacts to special-status bats shall be minimized by performing preconstruction surveys and creating no-disturbance buffers around active bat roosting sites. Before construction activities (i.e., ground clearing and grading, including trees or shrub removal) within 200 feet of trees that could support special-status bats, a qualified bat biologist shall survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, or strong odors) is observed, no further mitigation shall be required. If evidence of bats is observed, the following measures shall be implemented to avoid potential impacts on breeding populations: A no-disturbance buffer of 200 feet shall be created around active bat roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected by the indirect effects of noise and construction disturbances. However, the direct take of individuals will be prohibited. Removal of trees showing evidence of active bat activity shall occur during the period least likely to affect bats, as determined and monitored by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and</p>	Reclamation, and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>April 15 for maternity roosts). If the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and human activity adjacent, bat exclusion activities (e.g., installation of netting to block roost entrances) shall also be conducted during these periods. If special-status bats are identified in the dam or special allowances must be made to relocate bats, DWR will coordinate the effort in advance with CDFW.</p>			
TERR-12	<p>San Joaquin Kit Fox San Joaquin kit fox would be affected by construction activities if animals are harmed or killed by equipment, their movement is blocked or their dens or other habitat is altered or destroyed. Consultation with the USFWS through the Section 7 process may be required to determine avoidance, conservation, and mitigation measures. Prior to construction, a qualified biologist will conduct surveys to identify potential dens more than 4 inches in diameter. A habitat assessment in 2010 found 195 potential kit fox dens in the San Luis Reservoir work area (Reclamation 2010c; see Appendix I, Biological Resources Appendix). If dens are located within the proposed work area, and cannot be avoided during construction activities, a USFWS- and CDFW-approved biologist will determine if the dens are occupied. If occupied dens are present within the proposed work, their disturbance and destruction shall be avoided. Exclusion zones will be implemented following the latest USFWS procedures (USFWS 2011).</p> <p>The Proponent shall implement San Joaquin kit fox protection measures. The following measures, which are intended to reduce direct and indirect project impacts on San Joaquin kit foxes, are derived from the <i>San Joaquin Kit Fox Survey Protocol for the Northern Range</i> (USFWS 1999a) and the <i>Standardized Recommendations for Protection of the San Joaquin Kit Fox</i> (USFWS 1999b). The following measures shall be implemented for construction areas at San Luis Reservoir:</p> <p>Preconstruction surveys shall be conducted within 200 feet of work areas to identify potential San Joaquin kit fox dens or other refugia in and surrounding workstations. A qualified biologist shall conduct the survey for potential kit fox dens 14 to 30 days before construction begins. All identified potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium at den entrances and monitoring for at least 3 consecutive nights. If no activity is detected at these den sites, they shall be closed following guidance established in the USFWS <i>Standardized Recommendations</i> report (USFWS 1999b).</p> <p>If kit fox occupancy is determined at a given site during the pre-construction surveys or during the construction period, the construction manager should be immediately informed that work should be halted within 200 feet of the den and the USFWS contacted. Depending on the den type, reasonable and prudent measures to avoid effects to kit foxes could include seasonal limitations on project construction at the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a</p>	Reclamation, and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence.</p> <p>Off-road vehicle and equipment movement will be limited to the project footprint.</p> <p>To compensate for permanent impacts to grassland, which provides habitat for San Joaquin kit fox, lands shall be acquired and covered by conservation easements or mitigation credits shall be purchased at a 2:1 mitigation ration, or other compensation ratios approved by the USFWS and the CDFW.</p>			
TERR-13	<p>American Badger</p> <p>Impacts on badgers within annual grasslands and oak woodland at San Luis Reservoir will be minimized through a combination of worker training, preconstruction surveys, and passively or actively relocating animals. Concurrent with other required surveys, during winter/spring months before new project activities, and concurrent with other preconstruction surveys (e.g., kit fox and burrowing owl), a qualified biologist shall perform a survey to identify the presence of active or inactive American badger dens. If this species is not found, no further mitigation shall be required. If badger dens are identified within the construction footprint during the surveys or afterwards, they shall be inspected and closed using the following methodology:</p> <p>When unoccupied dens are encountered outside of work areas but within 100 feet of proposed activities, vacated dens shall be inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials.</p> <p>If badger occupancy is determined at a given site within the work area, work activities at that site should be halted. Depending on the den type, reasonable and prudent measures to avoid harming badgers will be implemented and may include seasonal limitations on project construction near the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den at a later time to determine species presence or absence.</p> <p>Badgers may be passively relocated using burrow exclusion (e.g., installing one-way doors on burrows) or similar CDFW-approved exclusion methods. In unique situations it might be necessary to actively relocate badgers (e.g., using live traps) to protect individuals from potentially harmful situations. Such relocation would be performed with advance CDFW coordination and concurrence.</p>	Reclamation, and DWR	Field verification	Prior to and during construction
TERR-14	<p>Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp</p> <p>While project design is planned to avoid fill of seasonal wetlands and pools identified as suitable habitat for vernal pool crustaceans, if any vernal pool fairy shrimp or vernal pool tadpole shrimp habitat will be impacted, the project proponent may assume presence of the species. Consultation with the USFWS through the Section 7 process may be required to determine avoidance, conservation, and mitigation measures. Measures may include,</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	but are not limited to, compensating for impacts at a 2:1 ratio for preservation and at a 1:1 ratio for creation.			
TERR-15	<p>Contractor Environmental Awareness Training and Site Protection Measures. All construction personnel working in biologically sensitive areas shall attend an environmental education program delivered by a qualified biologist prior to starting work. The training shall include an explanation as how to best avoid the accidental take of special-status plants and wildlife. The field meeting shall include species identification, life history, descriptions, and habitat requirements. The program shall include an explanation of Federal and State laws protecting endangered species, and avoidance and minimization methods being implemented to protect these species. A qualified biologist will be present on the site at all times during construction.</p> <p>The contractor shall provide closed garbage containers for the disposal of all trash items (e.g., wrappers, cans, bottles, food scraps). Work sites shall be cleaned of litter before closure each day, and placed in wildlife-proof garbage receptacles. Construction personnel shall not feed or otherwise attract any wildlife. No pets, excluding service animals, shall be allowed onsite or in construction areas.</p> <p>Nighttime vehicle traffic shall be kept to a minimum on non-maintained roads with a maximum speed of 15 miles per hour.</p> <p>To minimize disturbance to wildlife, temporary and permanent exterior lighting shall be installed such that:</p> <ul style="list-style-type: none"> (a) lamps and reflectors are not visible from beyond the project site, (b) reflective glare will be minimized to the extent feasible; (c) illumination of the project and its immediate vicinity is minimized; (d) lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated; (e) all lighting shall be of minimum necessary brightness consistent with operational safety and security; (f) lights in areas not occupied on a continuous basis (such as maintenance areas) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied, and (g) the plan complies with local policies and ordinances. 	Reclamation, and DWR	Field verification	Prior to and during construction
TERR-16	<p>Mitigation measures for special-status communities, including jurisdictional wetlands or waters, and streambeds and banks regulated by the CDFW, RWQCB, and United States Army Corps of Engineers (USACE), and native grassland. <i>Mitigation Measure TERR -16a.</i> Final project design shall avoid and minimize the fill of wetlands and other waters to the greatest practicable extent. The following actions shall be performed to protect jurisdictional wetlands:</p>	Reclamation, and DWR	Field verification, and documentation on file with Reclamation and DWR.	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<ol style="list-style-type: none"> 1. The distribution of Federal and State jurisdictional wetlands and waters; streambeds and banks regulated by CDFW; and sensitive habitat regulated by CDFW, shall be defined and avoided to the greatest possible extent. 2. Prior to construction, a qualified biologist shall delineate the extent of jurisdictional areas to be avoided in the field. Reclamation will designate areas to be avoided as “Restricted Areas” and protect them using highly visible fencing, rope, or flagging, as appropriate based on site conditions. No construction activities or disturbance will occur within restricted areas that are designated to protect wetlands. 3. Minimize the removal of riparian and wetland vegetation. Avoid disturbance of riparian and aquatic habitat north of the access road to the dam. 4. Minimize the removal or damage to purple needlegrass grassland. Avoid impacts to native grasslands in the staging area. <p><i>Mitigation Measure TERR-16b.</i> Where jurisdictional wetlands and other waters cannot be avoided, to offset temporary and permanent impacts that would occur as a result of the project, restoration and compensatory mitigation shall be provided as described below. A wetland mitigation and monitoring plan shall be developed in coordination with CDFW, USACE, and/or the RWQCB that details mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities; and other CDFW jurisdictional areas. The plan shall quantify the total acreage affected; provide for mitigation as described below to wetland or riparian habitat; annual success criteria; mitigation sites; monitoring and reporting requirements; and site-specific plans to compensate for wetland losses resulting from the project.</p> <p>Prior to construction, the aquatic structure of wetland and riparian areas to be disturbed will be photo-documented, and measurements of width, length, and depth will be recorded. DWR will recontour and revegetate disturbed portions of jurisdictional areas in areas temporarily affected by construction prior to demobilization by the contractor at the end of project construction. Creek banks will be recontoured to a more stable condition if necessary.</p> <p>Revegetation will include a palette of species native to the watershed area according to a revegetation plan to be developed by Reclamation and submitted to the USACE, CDFW, and RWQCB for approval. Following removal, woody trees habitat acreage would be replanted at a minimum 1:1 ratio, or as determined and agreed upon by the permitting agencies. Interim vegetation or other measures will be implemented as necessary to control erosion in disturbed areas prior to final revegetation.</p> <p>Wetland and other waters impact in the construction area shall be compensated at a ratio of 2:1 or at a ratio agreed upon by the wetland permitting agencies. Compensatory mitigation shall be conducted by creating or restoring wetland and aquatic habitat at an agency-approved location on nearby lands or through purchasing mitigation credits at a</p>			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	<p>USACE and/or CDFW-approved mitigation bank (depending on the resource). If mitigation is conducted on- or off-site, a five-year wetland mitigation and monitoring program for onsite and offsite mitigation shall be developed. Appropriate performance standards may include, but are not limited to: a 75 percent survival rate of restoration plantings; absence of invasive plant species; and a viable, self-sustaining creek or wetland system at the end of five years.</p> <p>A weed control plan for the project to limit the spread of noxious or invasive weeds shall also be developed. This plan would be consistent with current Integrated Pest Management Plans that are already in practice on lands surrounding the reservoir. Noxious or invasive weeds include those rated as "high" in invasiveness by the California Invasive Plant Council. The plan will include a baseline survey to identify the location and extent of invasive weeds in the project area prior to ground-disturbing activity, a plan to destroy existing invasive weeds in the construction area prior to initiation of ground-disturbing activity, weed-containment measures while the project is in progress, and monitoring and control of weeds following completion of construction.</p>			
REC-1	<p>REC - 1: Campsite and Facilities Replacement. Campsites closed at San Luis Reservoir during construction of the Crest Raise Alternative will be replaced at a 1:1 ratio at the San Luis Creek Use Area and then as necessary at the Los Banos Creek Use Area, including six American with Disabilities Act (ADA) accessible campsites and Recreational Vehicle (RV) accommodations. These new replacement campsites would be developed consistent with the new facilities considered in the <i>San Luis Reservoir SRA Resource Management Plan/General Plan (RMP/GP)</i> and will not exceed the quantities of new facilities considered in the RMP/GP at each Use Area. The new campsites would be constructed concurrent to the crest construction period during a period of low precipitation in order to reduce the risk of accidental leaks or spills, potential for soil contamination and to minimize erosion of loose materials in construction areas, as per Goal RES-WQ4 in the <i>San Luis Reservoir SRA RMP/GP</i> (Reclamation and CDPR 2013):</p> <ul style="list-style-type: none"> Design, construct, and maintain buildings, roads, trails, campsites, boat launches and marinas, and associated infrastructure to minimize stormwater runoff, promote groundwater recharge, and prevent soil erosion. <p>The new campsites would be constructed within the San Luis Creek use area at the SRA on O'Neill Forebay. Reclamation will include this mitigation requirement in bid documents and construction contracts.</p> <p>In addition, Reclamation will work with CDPR to implement the following measure. The boat launches at the San Luis Creek and Dinosaur Point use areas would be expanded by addition of a launch lane and a boarding float at each area. In addition, a fish cleaning station, public storage lockers, and shower facilities would be developed at San Luis Creek man use area.</p>	Reclamation, and DWR	Documentation on file with Reclamation, and DWR, and field verification	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
CR-1	<p>Mitigation Measure CR-1: Implement a formal agreement document to govern National Historic Preservation Act (NHPA) Section 106 compliance and resolve any adverse effects/significant impacts to cultural resources</p> <p>The Reservoir Restriction Alternative fails to meet one of three critical objectives under the Proposed Action because it would result in a reduction in San Luis Reservoir storage capacity that would adversely impact water supply deliveries to Central Valley Project and State Water Project contractors. The Crest Raise Alternative, which is the preferred alternative, meets each of the Proposed Action objectives. As efforts to identify historic properties are unable to be fully completed, and effects on historic properties cannot be fully determined prior to the approval of the Project, an agreement document was negotiated to satisfy NHPA Section 106 compliance. Additional surveys are needed to identify potential historic properties within the area of potential effects. These surveys will be managed under the agreement document. Due to the need for additional surveys, potential adverse effects/significant impacts to historic properties are not fully known. Reclamation negotiated a programmatic agreement with the State Historic Preservation Officer, which was executed on September 12, 2019. Reclamation will complete the additional historic property identification and evaluation efforts under the negotiated programmatic agreement, and any adverse effects to historic properties will be "resolved" through the completion of the Section 106 process, which will satisfy Federal lead agency requirements with respect to National Environmental Policy Act (NEPA). A process to avoid, minimize impacts to, and/or mitigate adverse effects to historic properties was formalized in the programmatic agreement document in compliance with 36 CFR Part 800.6(c). DWR will be a party to this agreement document.</p>	Reclamation	Documentation on file with Reclamation	Prior to and during construction