B.F. Sisk Dam Safety of Dams Modification Project
Final Environmental Impact Statement/ Environmental Impact Report

Estimated Lead Agency Total Costs Associated with Developing and Producing this EIS/EIR is $2,700,000

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Mid-Pacific Region
Sacramento, California

DEPARTMENT OF WATER RESOURCES
STATE OF CALIFORNIA

Sacramento, California

August 2019

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California Department of
Water Resources
Sacramento, California

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Mission Statements

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

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.

The mission of the California Department of Water Resources is to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

Final Environmental Impact Statement/Environmental Impact Report
B.F. Sisk Dam Safety of Dams Modification Project
Merced County, California

Lead Agencies: U.S. Department of the Interior, Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR)

State Clearninghouse # 2009091004

ABSTRACT

Reclamation and DWR have made available for public review the B.F. Sisk Dam Safety of Dams (SOD) Modification Project (Project) Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR). Reclamation and DWR published a Notice of Availablity for the Draft EIS/EIR (DEIS/EIR) in the Federal Register (Vol. 84, No. 71) on Friday, April 12, 2019. Investigations conducted under Reclamation's Safety of Dam Program determined that several sections of B.F. Sisk Dam sit above liquefiable and soft soils. During a seismic event, sections of the dam could slump below the water line or allow cracking to develop through the embankment which could lead to dam failure. The DEIS/EIR evaluates the potential impacts of alternatives to prevent destabilization of the dam embankment, reduce safety concerns, and maintain water supply deliveries to State and Federal contractors. The alternatives evaluated in the DEIS/EIR include limiting reservoir storage by restricting the maximum water height and raising the dam crest (an additional 12 feet) with stability berm and face filters.

This FEIS/EIR has been prepared according to requirements of the National Environmental Policy Act and the California Environmental Quality Act. This FEIS/EIR contains all comments on the DEIS/EIR and the responses to those comments and its contents are integrated with the DEIS/EIR.

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Contents

Page

Tables

Figures

Appendices

Abbreviations and Acronyms

ADA	American with Disabilities Act
AF	acre-feet
Agency	Kern County Water Agency
ATF	U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives
CARB	California Air Resources Board
CAS	Corrective Action Study
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Parks and Recreation
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regualations
CVP	Central Valley Project
dBA	A-weighted decibels
DEIS/EIR	Draft Environmental Impact Statement/Environmental Impact Report
Delta	Sacramento-San Joaquin River Delta
DWR	California Department of Water Resources
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	Environmental Protection Agency
FEIS/EIR	Final Environmental Impact Statement/Environmental Impact Report
GHG	greenhouse gas
LUST	Leaking Underground Storage Tank
Metropolitan	Metropolitan Water District of Southern California
MMRP	Mitigation Monitoring and Reporting Program
$MTCO_2e$	metric tons carbon dioxide equivalent
NCP	Noise Control Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOP	Notice of Preperation
NVS	north valley section
P.L.	Public Law
PRA	probabilistic risk analysis

PRC	Public Resources Code
Reclamation	United States Department of the Interior, Bureau of Reclamation
RMP/GP	Resource Management Plan/General Plan
RV	Recreational Vehicle
RWQCB	Regional Water Quality Control Board
SCVWD	Santa Clara Valley Water District
SGMA	Sustainable Groundwater Management Act
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLLPIP	San Luis Low Point Improvement Project
SOD	Safety of Dams
SR	State Route
SRA	State Recreation Area
SVS	south valley section\
SWC	State Water Contractors
SWP	State Water Project
UN	United Nations
U.S.	United States
USACE	United States Army Corps of Engineers
USBR	United States Department of the Interior, Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
VELB	valley elderberry longhorn beetle

Chapter 1
Introduction

The United States Department of the Interior, Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) published a Notice of Availability for the B.F. Sisk Dam Safety of Dams (SOD) Modification Project (Project) Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) in the Federal Register (Vol. 84, No. 71) on Friday, April 12, 2019. The DEIS/EIR identified three alternatives, the No Action/No Project Alternative, the Reservoir Restriction Alternative, and the Crest Raise Alternative. Public meetings were held May 7, 2019 and May 8, 2019 in the cities of Sacramento and Los Banos, California. The public comment period concluded May 28, 2019. Written comments were received from Federal, State, and Local agencies.

This Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) contains all comments on the DEIS/EIR and the responses to those comments, and also contains the following elements:

- Chapter 2 is an overview of the B.F. Sisk Dam SOD Project.
- Chapter 3 provides comments on the DEIS/EIR excerpted from the comment letters and the responses to those comments.
- Chapter 4 presents revisions to the DEIS/EIR text based on issues raised by comments, or corrections.
- Chapter 5 contains the mitigation and monitoring plan.
- Chapter 6 includes the references.
- Appendix A includes copies of the original comment letters.
- Appendix B includes the distribution list for the document.

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Chapter 2
Overview of the B.F. Sisk Dam Safety of Dams Modification Project

2.1 Project Background

B.F. Sisk Dam was constructed to create the off-stream San Luis Reservoir which provides supplemental storage capacity for the Central Valley Project (CVP) and State Water Project (SWP). Reclamation and DWR have conducted several geological investigations at B.F. Sisk Dam because of its location near active faults. In 2006, Reclamation completed a risk analysis of B.F. Sisk Dam that evaluated dam stability in the event of seismic activity. The analysis concluded that significant- to high-seismic activity could result in dam failure and B.F. Sisk Dam did not meet the standards of Reclamation's Public Protection Guidelines (Reclamation 2011). Reclamation initiated a Corrective Action Study (CAS) in 2006 that resulted in the evaluation of multiple potential structural modifications and operational changes at B.F. Sisk Dam that were compiled and further reviewed in a Value Planning Study (2016).

B.F. Sisk Dam is located on the west side of California's Central Valley between Los Banos and Gilroy. B.F. Sisk Dam impounds San Luis Reservoir and is part of the San Luis Joint-Use Complex or San Luis Unit, which was authorized by Congress in 1960 under the San Luis Act (Public Law [P.L.] 86-488) and is a joint effort of the Federal (Reclamation) and State (DWR) governments. The dam is a zoned, earthfill structure 382 feet high with a crest length of 18,600 feet (approximately 3.5 miles) and a crest width of 30 feet; it contains 77,656,000 cubic yards of material. At a crest elevation of 554 feet above mean sea level, the maximum base width is 2,420 feet (Reclamation 2009).

The San Luis Reservoir provides 2,027,840 acre-feet (AF) of water storage for the CVP and the SWP. The water stored in the reservoir is managed for State (55 percent) and Federal (45 percent) uses as part of the SWP and CVP, respectively. Typically, during the winter and early spring, water is lifted from O'Neill Forebay into the San Luis Reservoir for storage using the pump-turbines in the Gianelli Pumping-Generating Plant. Then later in the year when demand in the CVP and SWP increases, water is released from San Luis Reservoir through O'Neill Forebay and conveyed via the California Aqueduct (a SWP facility) or the Delta-Mendota Canal (a CVP facility) for use by municipal and agricultural water users (Reclamation 2009). As water is released back through the Gianelli Pumping-Generating Plant, the plant generates hydropower, which is used to offset the energy demand of the project operations. Water is also diverted from the west side of San Luis Reservoir at the Pacheco Pumping Plant to supply water to CVP contractors the Santa Clara Valley Water District and San Benito County Water District (Reclamation 2013). In addition to storing and supplying water, the San Luis Reservoir provides recreation opportunities under an agreement between Reclamation and DWR.

Reclamation owns the lands encompassing San Luis Reservoir, and DWR is responsible for managing facility operations. Under an agreement with Reclamation, the California Department of Parks and Recreation manages the recreation facilities and recreational use of San Luis Reservoir, which is part of the larger San Luis Reservoir State Recreation Area. Figure 2-1 presents a map of the study area for the DEIS/EIR. The study area includes:

- San Luis Reservoir, Merced County;
- Sacramento-San Joaquin River Delta (Delta);
- California Aqueduct;
- Delta-Mendota Canal; and
- South-of-Delta CVP, SWP Contractors' service areas.

Figure 2-1.
Study Area

2.1.1 Safety of Dams Program

Reclamation's Dam Safety Program was officially implemented in 1978 with passage of the Reclamation Safety of Dams Act, P.L. 95-578. Dams must be operated and maintained in a safe manner, ensured through inspections for safety deficiencies, analyses utilizing current technologies, and corrective actions if needed based on current engineering practices. The SOD

program focuses on evaluating and implementing actions to resolve safety concerns at Reclamation dams (Reclamation 2017).

2.1.1.1 Analysis of Risk

In an effort to balance public safety and costs for modifying dams, Reclamation uses a risk-informed approach to making dam-safety decisions. The analysis of risk includes the probability of an event (e.g. severe earthquake) in any particular year, the likelihood of dam failure if the event were to occur, and the consequences of dam failure. The decisions are then based on Reclamation's Public Protection Guidelines. Reclamation and DWR completed a probabilistic risk analysis (PRA) of B.F. Sisk Dam that included earthquake deformation analysis and soil testing. A PRA consists of a detailed study of the chain of events that would have to occur and the likelihood of their occurrence in order for the dam to fail (Reclamation 2007). Reclamation performs PRAs for all dams in the Reclamation dam safety inventory. For B.F. Sisk Dam, failure was determined to be very unlikely in any particular year; however, the consequences could be severe.

2.2 Purpose and Need/Project Objectives

Investigations conducted under Reclamation's SOD Program determined that several sections of B.F. Sisk Dam sit above liquefiable and soft soils. During a seismic event, sections of the dam could slump below the water line or allow cracking to develop through the embankment which could lead to dam failure.

The San Luis Reservoir is an important CVP and SWP facility and a key component of California's water supply system. Therefore, proper functioning of the reservoir is critical to maintaining water distribution for Federal, State, and local uses. Reclamation and DWR have determined that actions to reduce risks from earthquakes to the public downstream of the dam are needed.

The purpose of the Proposed Action, the B.F. Sisk Dam SOD Project, is for Reclamation and DWR to:

1. Implement cost-effective measures to prevent destabilization of the dam embankment and to ensure dam stability, in the event of an earthquake;

2. Reduce safety concerns of the public downstream of the dam; and

3. Maintain water supply deliveries to State and Federal contractors through the CVP and SWP.

2.3 Development and Screening of Preliminary Alternatives

The Lead Agencies, Reclamation and DWR, used a comprehensive process to develop initial alternatives that included review of existing material, public input, and comparison and evaluation of initial alternatives using the Federal planning criteria and the purpose and

need/project objectives. The following sections describe the alternatives development and selection process as well as the screening criteria used to refine the initial range of alternatives.

2.3.1 Alternatives Development and Screening

The development of the initial alternatives was consistent with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA), which require a project proponent to consider a reasonable range of alternatives. CEQA requires that an EIR present a reasonable range of potentially feasible alternatives that would avoid or lessen a proposed project's significant environmental impacts (CEQA Guidelines Section 15126.2(a)).

To formulate the alternatives, a structured process was developed that included internal and public scoping. The first step of this process was for the Lead Agencies to determine the purpose and need/project objectives. The Lead Agencies then sought input from stakeholders and the public on the project during a scoping effort completed in 2009. Feedback received during public scoping, along with the studies completed as a part of the ongoing CAS, including the 2016 Value Planning Study, were used to identify potential measures to address the purpose and need of action. These measures were then evaluated using screening criteria developed by the Lead Agencies. Options that sufficiently met each screening criteria were carried forward for consideration as a stand-alone alternative or as a component of a combined alternative. A diagram of this process is shown below in Figure 2-2.

Figure 2-2.
Alternative Development Process

The measures that remained following this first phase of screening fell into two categories – non-structural and structural measures. These options included:

- Reservoir Restriction
- Maximum Pool Timeframe Limits
- Groundwater Banking
- Use alternative water supply to offset losses from restrictions
- Early Warning System
- Berm construction
- Install filter
- Alternate dam site
- Develop flood corridor/Construct new flood spillway
- Breach/Dam Removal
- Crest Raise

The Lead Agencies developed five criteria to evaluate the measures that have been carried forward into the second phase of the screening process. Three of these criteria addressed the ability of the measure to address the purpose and need of the project: reduction in safety concerns to the downstream public and ability to maintain water supply deliveries. Two other criteria addressed the cost effectiveness of the measure, and the acceptability of the environmental impacts. Measures were scored qualitatively for each of the five screening criteria. The metrics used were:

- The measure fully addressed the screening criteria
- The measure partially met the screening criteria
- The measure did not address the screening criteria

Only those measures that scored highest moved forward as stand-alone alternatives. Some lower scoring measures remained in consideration because of their ability to help a combined alternative more fully meet the purpose and need, address cost effectiveness, or minimize adverse environmental impacts. Measures were eliminated from further consideration if they would not meet the Project's purposes and needs, would require excessive cost expenditures, or would have substantial adverse environmental effects.

2.4 Project Description

The two action alternatives and the No Action/No Project Alternative analyzed in the DEIS/EIR are summarized below.

2.4.1 Alternative 1 - No Action/No Project Alternative

Both NEPA regulations (40 Code of Federal Regulations [CFR] 1502.14(d)) and CEQA Guidelines (Section 15126.6) require the evaluation of a No Action or No Project Alternative, which presents the reasonably foreseeable future conditions in the absence of the proposed project. The purpose of the No Action or No Project Alternative is to allow decision makers to compare the impacts of approving the project to the impacts of not approving the project. Under NEPA, the No Action Alternative also serves as the baseline to which action alternatives are compared to determine potential impacts. This differs from CEQA, where existing conditions (conditions at the time of the Notice of Preparation) serve as the baseline to determine potential impacts of the alternatives. The No Action/No Project Alternative may differ from the existing conditions if there are actions that could occur in the project area in the future, that 1) currently do not exist and 2) do not rely on approval or implementation of the proposed project.

Under the No Action/No Project Alternative, there would be no structural or operational changes to the dam. B.F. Sisk Dam would not be improved, and no new structures would be installed to protect the dam from potential seismic failure. No changes to the operation of B.F. Sisk Dam or the storage level of the reservoir would occur and the freeboard for the normal reservoir pool would remain at 10 feet. This alternative does nothing to reduce the risk of failure from overtopping due to large seismically-induced deformations of the dam. The dam would continue to be susceptible to liquefaction and strength loss, resulting in a reduction of the crest elevation caused by seismic loading and the seismic risk would remain unchanged. This alternative would not meet the purpose or objective of the Proposed Action. The No Action/No Project Alternative

reflects, for most resources evaluated in the DEIS/EIR, existing and expected future conditions in the project area if no action is taken.

2.4.2 Alternative 2 - Reservoir Restriction Alternative

The Reservoir Restriction Alternative would limit the storage of the reservoir by restricting the maximum water height. If the reservoir is maintained at a lower operating level, there is a lower probability of failure given an increase in allowable dam slumping that could occur in a seismic event before overtopping and a reduction of pressure on the embankment in areas where cracking could occur. This alternative may also reduce the consequences of dam failure by eliminating or reducing the total amount of possible floodwater that could be released from the dam during a seismicity-induced failure event. The reduction in total storage capacity in San Luis Reservoir would adversely impact water supply deliveries to CVP and SWP contractors. This reduction in water supply would not meet one of the three objectives of the Proposed Action. However, the Reservoir Restriction Alternative is analyzed in the DEIS/EIR as a non-structural alternative to prevent destabilization of the dam embankment, ensure dam stability, and reduce safety concerns.

Construction associated with the Reservoir Restriction Alternative would be limited to revegetation of the reservoir rim between the current maximum reservoir water surface elevation and the restricted reservoir maximum surface elevation. Hydroseeding would take place over a 1.5 year period in order to establish vegetation along the new sections of reservoir rim.

The Reservoir Restriction Alternative would consist of a 55 foot reduction in the maximum water surface elevation of San Luis Reservoir from the current elevation of 544 feet to 489 feet. This would permanently reduce the maximum storage capacity of the reservoir from 2,027,840 AF to 1,383,000 AF.

2.4.3 Alternative 3 - Crest Raise Alternative

The Crest Raise Alternative would reduce safety concerns for the downstream public by reducing the likelihood of overtopping if slumping were to occur during a seismic event by increasing dam height. This alternative would also address dam failure due to earthquake-induced cracking. This measure maintains water supply deliveries to State and Federal contractors through the CVP and SWP because it allows the reservoir to operate at its current maximum storage elevation. The cost of the Crest Raise Alternative is likely to be high given the major construction action required. The construction actions required by the Crest Raise Alternative would also generate adverse environmental impacts. The Crest Raise Alternative is the Preferred Alternative.

As part of this alternative, the dam crest would be raised by adding additional embankment material (see Figure 2-3) in conjunction with the addition of stability berms and downstream crack filters. The foundation that the dam is built on can be divided into sections: the right abutment, the left abutment, the north valley section (NVS), and the south valley section (SVS) (See Figures 2-3 and 2-4). Construction of foundation shear keys at slopewash and north valley sections, and a filter around the existing spillway conduit are also included in this alternative. In addition to these modifications, development of a foundation shear key at the SVS is under consideration as an optional additional feature of this alternative.

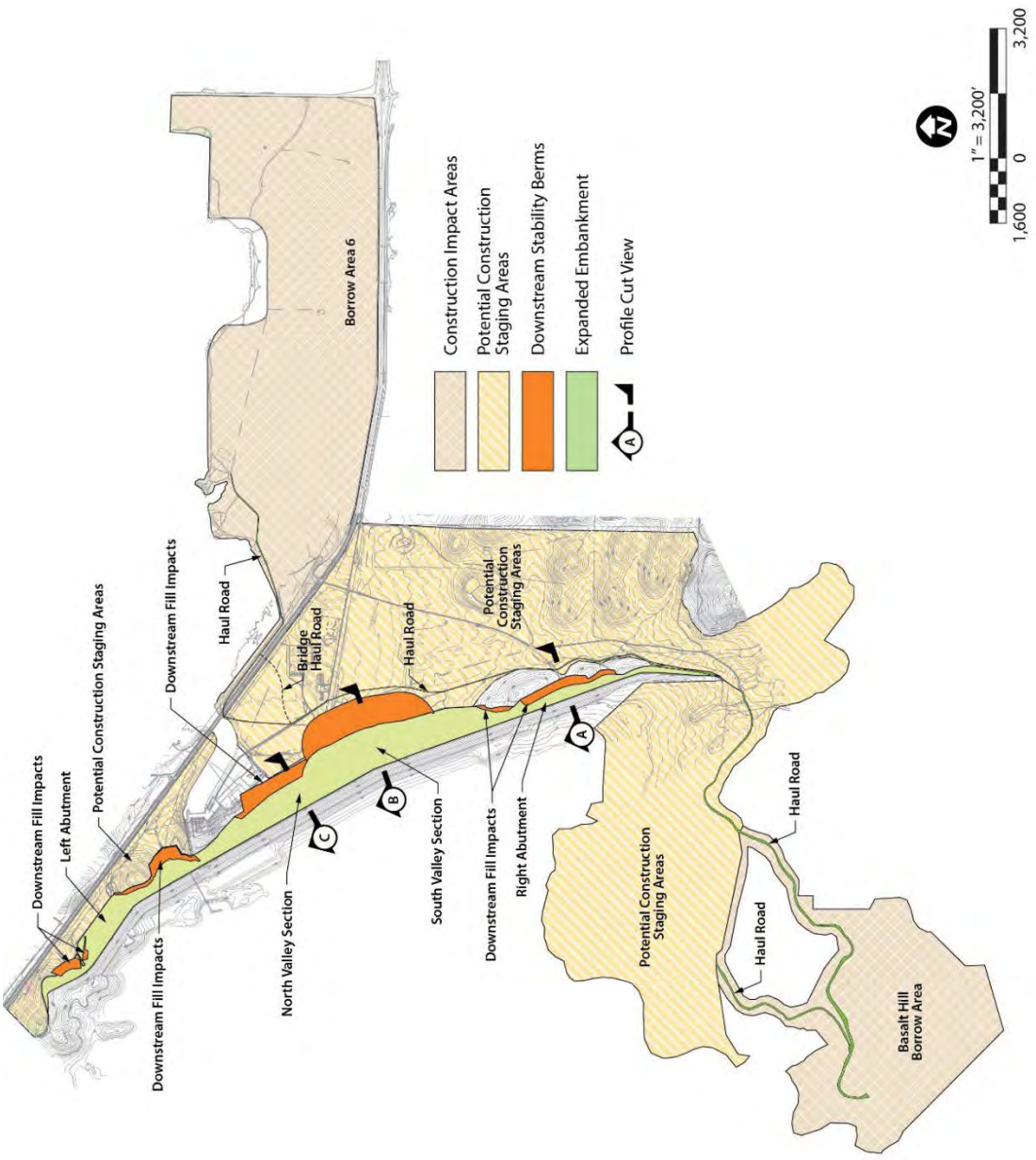

Figure 2-3.
Crest Raise Alternative

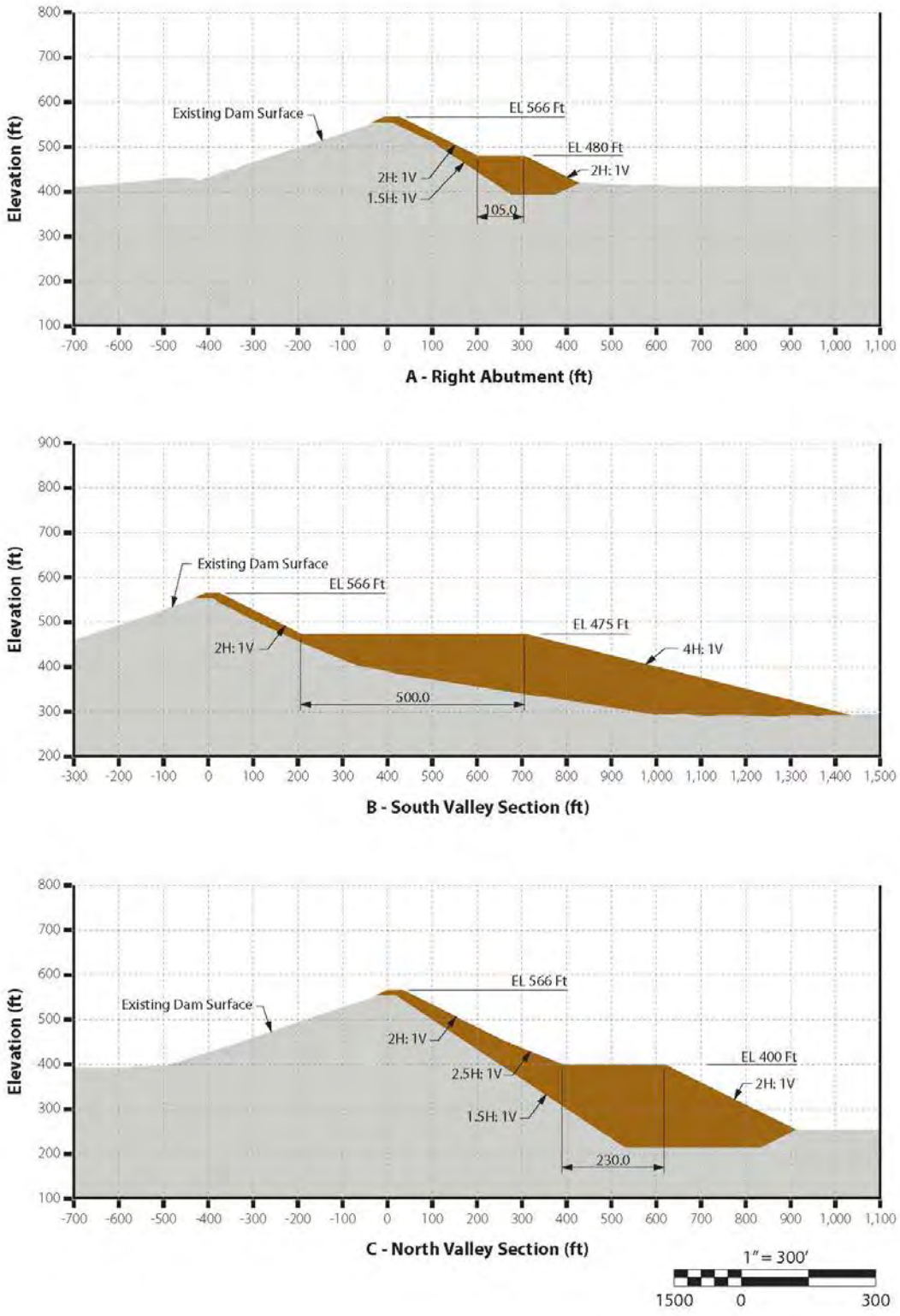

Figure 2-4.
Crest Raise Profiles

2.5 Summary of Environmental Impacts

A summary of the environmental impacts identified for each alternative (including beneficial effects) are presented in Tables 2-1 and 2-2. The purpose of Table 2-1 is to consolidate and disclose the significance determinations made pursuant to CEQA throughout the DEIS/EIR. The impacts listed in Table 2-1 are NEPA impacts as well as CEQA impacts, but they are judged for significance only under CEQA.

Table 2-2 summarizes impacts for resources that were analyzed only under NEPA and do not include findings of significance.

Table 2-1.
Potential Impacts Summary

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
4. Water Quality				
Substantially degrade existing water quality conditions.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Change south-of-Delta CVP and SWP exports and Delta outflow.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Temporary violation of existing water quality standards or waste discharge requirements as a result of construction activities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Violation of existing water quality standards or waste discharge requirements as a result of operations.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	NI	None	NI
5. Water Supply				
Construction could result in temporary interruptions in CVP water supply.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	None	SU

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction could result in temporary interruptions in SWP water supply.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	None	SU
Change deliveries to south-of-Delta CVP contractors.	Alternative 1- No Action/No Project	S	--	SU
	Alternative 2 - Reservoir Restriction	S	None	SU
	Alternative 3 - Crest Raise	NI	None	NI
Change deliveries to south-of-Delta SWP contractors.	Alternative 1 - No Action/No Project	S	--	SU
	Alternative 2 - Reservoir Restriction	S	None	SU
	Alternative 3 - Crest Raise	NI	None	NI
6. Groundwater				
Decreased south-of-Delta CVP water supply allocations could result in increased groundwater use that would cause changes to groundwater levels.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Increased groundwater pumping in lieu of south-of-Delta CVP surface water would decrease groundwater, increasing the potential for subsidence.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Increased groundwater pumping in lieu of south-of-Delta CVP surface water could substantially alter groundwater levels and/or flow patterns. Substantial reductions in groundwater levels for a long period of time could induce the movement or migration of reduced quality groundwater into previously unaffected areas.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Decreased south-of-Delta SWP water supply allocations could result in increased groundwater use that would cause changes to groundwater levels.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Increased groundwater pumping in lieu of south-of-Delta SWP surface water would decrease groundwater, increasing the potential for subsidence.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Increased groundwater pumping in lieu of south-of-Delta SWP surface water could substantially alter groundwater levels and/or flow patterns. Substantial reductions in groundwater levels for a long period of time could induce the movement or migration of reduced quality groundwater into previously unaffected areas.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Reductions in reservoir storage capacity could reduce reservoir seepage rates that could decrease groundwater levels in the surrounding groundwater aquifer.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	NI	None	NI
7. Air Quality				
Construction of the alternative could cause temporary and short-term construction-related emissions of criteria pollutants or precursors that would exceed the SJVAPCD's significance thresholds or the general conformity *de minimis* thresholds.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	AQ-1, AQ-2, and AQ-3	LTS
Operational activities associated with the alternative could cause long-term operation-related emissions of criteria pollutants or precursors that would exceed the SJVPCD's significance thresholds.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Construction associated with the alternative could cause temporary and short-term construction-related emissions of TACs that would exceed the SJVAPCD's significance thresholds.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction associated with the alternative could create objectionable odors affecting a substantial number of people.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
8. Greenhouse Gases				
Construction and operation associated with the alternative could generate GHG emissions, either directly or indirectly, that could cause a significant impact on the environment.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	GHG-1	LTS
Construction and operation associated with the alternative could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	GHG-1	LTS
9. Flood Protection				
Construction and operations of new facilities could result in the placement of structures in the 100-year flood hazard area which could impede or redirect flood flows.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction could result in the increased exposure of people or structures to an unacceptable risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Operation could result in the unaddressed exposure of people or structures to an unacceptable risk of loss, injury or death involving flooding, including flooding because of increases in the potential for the failure of a levee or dam.	Alternative 1 - No Action/No Project	S	--	SU
	Alternative 2 - Reservoir Restriction	B	None	B
	Alternative 3 - Crest Raise	B	None	B

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction and operation could result in the alteration of the existing drainage pattern and/or the creation of runoff water that would exceed the capacity of the existing or planned stormwater drainage system.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
10. Visual				
Have a substantial adverse effect on a scenic vista (areas with Scenic Attractiveness Class A or Class B classifications are considered scenic vistas).	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Substantially degrade the existing visual character or quality of the site and its surroundings.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	VIS-1	LTS
Substantially damage scenic resources within a State scenic highway corridor.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Operational changes at the San Luis Reservoir could affect visual resources.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
11. Noise				
Construction activities could expose sensitive receptors to noise levels in excess of standards established in the local general plan or noise ordinance.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	NOISE-1: Noise Control Plan; NOISE-2: Blasting Plan; NOISE-3: Noise Monitoring Program	SU

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction activities could expose sensitive receptors to excessive groundborne vibration or groundborne noise.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities and operation could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Construction activities could cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	NOISE-1: Noise Control Plan; NOISE-2: Blasting Plan; NOISE-3: Noise Monitoring Program	SU
Operational sources located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport could expose people residing or working in the project area to excessive noise levels.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
12. Traffic and Transportation				
Construction activities would cause a temporary increase in traffic and could result in substantial degradation of roadway LOS in the area of analysis.	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could increase traffic hazards due to a design feature or incompatible use.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	TR-1: Develop a Temporary Traffic Control Plan	LTS
	Alternative 3 - Crest Raise	S	TR-1: Develop a Temporary Traffic Control Plan	LTS

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required;
S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction activities could cause reductions in capacity, availability, or performance of public transit and non-motorized transportation, or conflict with any programs regarding public transit, bicycle, or pedestrian facilities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could result in inadequate emergency access.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	TR-1: Develop a Temporary Traffic Control Plan	LTS
	Alternative 3 - Crest Raise	S	TR-1: Develop a Temporary Traffic Control Plan	LTS
Operations and maintenance activities could cause increases in traffic and could result in substantial degradation of roadway LOS in the area of analysis.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations and maintenance activities could increase traffic hazards due to a design feature or incompatible use.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations and maintenance activities could cause substantial reductions in capacity, availability or performance of public transit and non-motorized transportation, or conflict with any programs regarding public transit, bicycle, or pedestrian facilities	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations and maintenance activities could result in inadequate emergency access.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
13. Hazards and Hazardous Materials				
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.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
During construction activities, 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.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	HAZ-1: Work with regulating agencies to review existing monitoring data and prepare remediation plan as warranted	LTS
Construction activities at San Luis Reservoir 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.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	S	HAZ-2: Coordination with seaplane base personnel HAZ-3: Issuance of NOTAM	LTS
Operational changes from implementation of the Project could limit the area available for Seaplane landing resulting in safety hazards for pilots and the public.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
During construction activities 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.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	TR-1: Traffic Control and Safety Plan	LTS
	Alternative 3 - Crest Raise	S	TR-1: Traffic Control and Safety Plan	LTS

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
The use of mechanical equipment during construction could increase the risk of wildfire within the vicinity of the project area.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	HAZ-4: Use of spark arrestors during construction.	LTS
	Alternative 3 - Crest Raise	S	HAZ-4: Use of spark arrestors during construction.	LTS
14. Fisheries Resources				
Construction activities around the San Luis Reservoir could destroy or adversely affect aquatic habitats for special-status fish species.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Construction activities could interfere with the movement of any native resident or migratory fish species.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Construction activities could conflict with the provisions of an approved local, regional, or State conservation plans.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations could destroy or adversely affect aquatic habitats for special-status fish species.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations could interfere with the movement of any native resident or migratory fish species in San Luis Reservoir.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations could conflict with the provisions of an approved local, regional, or State conservation plans.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
15. Terrestrial Resources				
Construction activities could destroy or adversely affect special-status natural communities including wetland and riparian vegetation communities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	TERR-16: Jurisdictional wetlands or waters, and streambeds and streambank mitigation	LTS
Construction activities could kill, harm, or disturb terrestrial wildlife, including special-status species, or their habitats.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	TERR-15	LTS
	Alternative 3 - Crest Raise	S	TERR-1 through TERR-5 and TERR-11 through TERR-15: Species-specific mitigation measures	LTS
Construction activities could disturb nesting migratory birds, including raptors.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	S	TERR-15	LTS
	Alternative 3 - Crest Raise	S	TERR-6 through TERR-10: Species-specific mitigation measures	LTS
Construction activities could destroy or adversely affect special-status plant species.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	TERR-1: Species-specific mitigation measures	LTS
Construction activities could adversely affect wildlife corridors.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction activities could result in conflicts with local policies or ordinances protecting biological resources.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	TERR-1 through TERR-15: Species-specific mitigation measures TERR-16: Jurisdictional wetlands or waters, and streambeds and streambank mitigation	LTS
Construction activities could reduce foraging habitat for golden eagles and California condors at the San Luis Reservoir.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	TERR-8: Species-specific mitigation measures	LTS
Operations could result in long term impacts to terrestrial resources.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
17. Land Use				
Construction activities associated with the alternative could affect land use around San Luis Reservoir by physically dividing a community.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction of the alternative could affect land use by conflicting with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environment effect.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

Key: B = beneficial; LTS = less than significant; NI = no impact; None = no feasible mitigation identified and/or required; S = significant; SU = significant and unavoidable; -- = not required per CEQA Guidelines

Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Operation of the alternative could result in changes to land use by conflicting with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environment effect.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	NI	None	NI
Operation of the alternative could result in changes to land use that would conflict with an applicable habitat conservation plan or community conservation plan.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
18. Agricultural Resources				
Construction activities could affect agricultural resources around San Luis Reservoir.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could affect agricultural resources in the south-of-Delta CVP and SWP service area.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Operation of the alternative could affect agricultural resources around San Luis Reservoir by converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operation of the alternative could result in changes to agricultural resources as a result of any changes to south-of-Delta CVP and SWP water supply deliveries.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	NI	None	NI
19. Recreation				
Recreational use on trails would be substantially reduced as a result of project construction.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Project construction could result in temporary closure to recreation facilities, resulting in a substantial loss of recreation opportunities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	S	REC-1	LTS
Project construction could displace visitors and substantially contribute to overcrowded conditions at other local and regional recreation sites.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Operational changes to water levels in recreational water bodies could affect recreational uses.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
22. Public Utilities, Services, and Power				
Construction activities could affect the provision of governmental services or facilities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could create the need for new stormwater facilities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could generate solid waste in need of disposal, which could exceed the capacity of landfills.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could use and/or depletion of local or regional energy supplies.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could result in wasteful, inefficient, or unnecessary consumption of energy.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Long-term operations could result in wasteful, inefficient, or unnecessary consumption of energy	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	NI	None	NI
Operations could result in increases in stormwater runoff and the need for new stormwater drainage facilities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	LTS	None	LTS
23. Cultural Resources				
Project implementation could lead to adverse effects/significant impacts to historic properties and/or historical resources	Alternative 1- No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	Avoidance, minimization of impacts, and/or mitigation measures—determined through completion of the Section 106 process—will be required prior to implementation of this alternative.	LTS
	Alternative 3 - Crest Raise	S	Avoidance, minimization of impacts, and/or mitigation measures—determined through completion of the Section 106 process—will be required prior to implementation of this alternative.	LTS
24. Population and Housing				
Construction could temporarily induce population growth in the area of analysis, and potentially require new housing to accommodate this growth.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Construction could displace people or houses, and potentially require construction of replacement housing.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operation could induce substantial population growth or housing in the area of analysis.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Operations could displace a number of people or houses, and potentially require construction of replacement housing.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
25. Geology, Seismicity, and Soils				
Construction activities could expose people or structures to adverse effects related to the rupture of a known earthquake fault.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities on unstable soils could result in the risk of loss, injury, or death as a result of liquefaction or landslides.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could take place on expansive soils creating a substantial risk to life or property.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Construction activities could result in the loss of availability of a known mineral resource of regional or local importance.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	LTS	None	LTS
	Alternative 3 - Crest Raise	LTS	None	LTS
Maintenance activities during operations could expose people or structures to adverse effects related to the rupture of a known earthquake fault.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	B	None	B
	Alternative 3 - Crest Raise	B	None	B

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Potential Impact	Alternative	Significance Pursuant to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Operations could result in long term impacts to geology, soils, or mineral resources.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	NI	None	NI
	Alternative 3 - Crest Raise	NI	None	NI
Seismic related ground failure could impact operation of alternative facilities.	Alternative 1 - No Action/No Project	NI	--	--
	Alternative 2 - Reservoir Restriction	B	None	B
	Alternative 3 - Crest Raise	B	None	B

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Table 2-2.
Impacts for NEPA – only Resources

Potential Impact	Alternative	Effect Determination
16. Regional Economics		
Construction and operation and maintenance expenditures could increase employment, income, and output in the regional economy.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Under the Reservoir Restriction Alternative: Increase of 452 jobs, $14.1 million in labor income and $28.6 million in revenue
	Alternative 3 - Crest Raise	Under the Crest Raise Alternative: Increase of 4,923 jobs, $185.0 million in labor income and $1,015 million in revenue Under the Crest Raise Alternative with shear key option: Increase of 5,700 jobs, $211.6 million in labor income and $1,382.5 million in revenue
Changes in recreation opportunities could affect economic activity in Merced County related to San Luis Reservoir.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Adverse Impact
	Alternative 3 - Crest Raise	Adverse Impact (Temporary)
Changes in water supply to CVP M&I water contractors in the Bay Area Region could affect the regional economy.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Adverse Impact
	Alternative 3 - Crest Raise	Adverse Impact (Temporary)
Changes in water supply to CVP agricultural water users in the San Joaquin Valley could affect the regional economy.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Adverse Impact
	Alternative 3 - Crest Raise	Adverse Impact (Temporary)

Potential Impact	Alternative	Effect Determination
Changes in water supply to SWP M&I water contractors in the Bay Area Region and Southern California Region could affect the regional economy.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Adverse Impact
	Alternative 3 - Crest Raise	Adverse Impact (Temporary)
20. Environmental Justice		
Expose a minority and/or low-income population to adverse or disproportionately high effects or hazards from project construction.	Alternative 1 - No Action/No Project	No Impact
	Alternative 2 - Reservoir Restriction	Adverse and Disproportionate Effect Would Not Occur
	Alternative 3 - Crest Raise	Potential Adverse Effect (minority populations) but not Disproportionate

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Chapter 3
Commenters, Comments, and Responses

This chapter contains responses to comments received on the B.F. Sisk Dam SOD Project DEIS/EIR, including all written comments received and oral comments submitted at public meetings. The comment letters are included in Appendix A.

Table 3-1 presents commenters and associated agencies or groups that submitted comments on the DEIS/EIR.

Table 3-1. List of Commenters

Commenter	Agency/Group	Date	Comment ID
Federal Agencies, Federal Elected Officials, and Tribal Governments			
Connell Dunning	United States Environmental Protection Agency	5/22/19	FA01
State Agencies and State Elected Officials			
Jennifer Pierre	State Water Contractors	5/24/19	SA01
Justin Fredrickson	California Farm Bureau Federation	5/28/19	SA02
Local Agencies and Local Elected Officials			
Jennifer Harriger	Metropolitan Water District of Southern California	5/24/19	LA01
Curtis Creel	Kern County Water Agency	5/24/19	LA02

Individual responses to comments are presented in the following sections.

3.1 Federal Agencies, Federal Elected Officials, and Tribal Governments

3.1.1 Comment Letter FA01, Connell Dunning, United States Environmental Protection Agency

Comment FA01-1

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. The Bureau of Reclamation, through the Preferred Alternative, known as the Crest Raise Alternative, proposes to raise the dam twelve feet in order to prevent

destabilization of the dam embankment, reduce safety concerns, and maintain water supplies to State and Federal contractors during a seismic event.

EPA is aware of another project in the planning area and for which the Draft EIS will be released for public comment in the near future. The San Luis Low Point Improvement Project proposes to address the water supply and water quality issues at San Luis reservoir through a possible dam raise, a new, lower intake, or an expansion of nearby Pacheco reservoir. Reclamation is a co-sponsor for this project along with the Santa Clara Valley Water District.

The San Luis Low Point Improvement Project is not mentioned in the Draft EIS; however, the project has overlapping alternatives and environmental impacts with the B.F. Sisk Dam Safety project. Possible overlapping impacts include, but are not limited to, air quality impacts from truck trips, recreation impacts to campgrounds and other recreational sites used as staging areas, and traffic and transportation impacts. The San Luis Low Point Improvement Project is a reasonably foreseeable project and EPA recommends that this project be included in an updated cumulative impacts analysis in the Final EIS, along with any specific mitigation measures that can be implemented to reduce potential cumulative impacts.

We note that effective October 22, 2018, EPA no longer includes ratings in our comment letters. Information about this change and EPA's continued roles and responsibilities in the review of federal actions can be found on our website at: https://www.epa.gov/nepa/epa-review-process-under-section-309-clean-air-act.

Response to Comment FA01-1

Because a DEIS/EIR had not been released for the San Luis Low Point Improvement Project (SLLPIP) prior to release of the B.F. Sisk Dam SOD Project DEIS/EIR, it was not identified as a cumulative project. Consistent with CEQA Guidelines Section 15130 (b)(1)(B), a lead agency is authorized to limit its analysis of probable future projects to those which are planned, or which have had an application made at the time the Notice of Preparation (NOP) is released for review. In the time since the posting of the B.F. Sisk Dam SOD Project DEIS/EIR on April 12, 2019, a DEIS/EIR for the SLLPIP was published by Reclamation and SCVWD on July 26, 2019. The SLLPIP DEIS/EIR presented the Pacheco Reservoir Expansion Alternative as SCVWD's Proposed Project.

Consistent with the EPAs request, Chapter 27, Cumulative Effects, of the DEIS/EIR has been updated to include an analysis of the Pacheco Reservoir Expansion Alternative of the SLLPIP as a cumulative project considered for potential overlapping impacts with the B.F. Sisk Dam SOD Project. Additional analysis has been added to Section 27.3.1, Water Quality, Section 27.3.2, Surface Water Supply, Section 27.3.4, Air Quality, Section 27.3.9, Traffic and Transportation, and Section 27.3.16, Recreation. Revisions to Chapter 27 of the DEIS/EIR are in Chapter 4, Section 4.5, of this FEIS/EIR.

3.2 State Agencies and State Elected Officials

3.2.1 Comment Letter SA01, Jennifer Pierre, State Water Contractors

Comment SA01-1

The State Water Contractors ("SWC") appreciate the opportunity to review and comment on the Draft Environmental Impact Statement/Environmental Impact Report ("EIS/EIR") prepared by the Bureau of Reclamation ("Reclamation") and the California Department of Water Resources ("DWR") for the B.F. Sisk Dam Safety of Dams Modification Project (the "Project"). We appreciate the step forward to address seismic issues at Sisk Dam. The SWC understand that Reclamation is serving as the lead agency under the National Environmental Policy Act ("NEPA") and that DWR is serving as the lead agency under the California Environmental Quality Act ("CEQA"). These comments are provided by the SWC for both NEPA and CEQA.

The SWC is a nonprofit mutual benefit corporation that represents and protects the common interests of its 27 members in California's State Water Project ("SWP"). Collectively, the SWC member agencies utilize the SWP and other facilities to deliver water to more than 26 million residents throughout the state and to more than 750,000 acres of agricultural lands. Hence, the SWC have an interest in any project that may impact SWP water supplies and operations.

Given the choice between Alternative 1 (no action), Alternative 2 (Permanent Reservoir restriction of 55 feet and a loss of 700,000 acre-feet of storage), or Alternative 3 (construct stability berms, face filters, and increase total freeboard), our preference would be for Alternative 3. Alternative 1 would leave an unmitigated risk to the public, and Alternative 2 would be detrimental to operations and yield of both the SWP and Central Valley Project ("CVP"). A general comment is that the EIR/EIS' listed impacts to water supply, groundwater, and recreation impacts for Alternative 2 should be rated as "significant" rather than the given "no impact" or "less than significant" labels.

Response to Comment SA01-1

Reclamation and DWR evaluated potential water supply impacts from the long-term operation of the Reservoir Restriction Alternative (Alternative 2) in Chapter 5 of the DEIS/EIR and identified those impacts as significant, consistent with the input provided by the commenter.

Reclamation and DWR also evaluated potential impacts to groundwater levels, subsidence, and groundwater quality in Chapter 6 of the DEIS/EIR and determined that while the Reservoir Restriction Alternative would significantly impact water supply availability, the implementation of regulatory limits on groundwater use required under the Sustainable Groundwater Management Act (SGMA) coupled with anticipated increases in groundwater recharge of Section 215 and Article 21 water supplies made available by the alternative to support SGMA compliance would limit the significance of impacts on groundwater levels, subsidence, and groundwater quality under this alternative.

Reclamation and DWR's review of potential impacts on recreation use at the reservoir under the Reservoir Restriction Alternative in Chapter 19 of the DEIS/EIR determined that the potential for the creation of overcrowded conditions at the recreational facilities in the San Luis Reservoir Recreation Area in excess of conditions present under existing conditions was unlikely. This is

due in part to the remaining capacity at the recreation facilities at nearby water bodies, including Los Banos Reservoir, O'Neill Forebay and Anderson Reservoir as well as the Basalt and Dinosaur Point use areas' existing capacity to support reservoir access at the lower reservoir elevations anticipated under the Reservoir Restriction Alternative. Comparison of the storage levels forecast for the Reservoir Restriction Alternative to the No Action/No Project Alternative across the model record identified a reduction in average surface elevation of 13 feet.

Comment SA01-2

In addition, we have concerns regarding the potential significant and unavoidable "temporary interruptions" to the SWP operations (Chapter 5). More thorough analysis of the potential impacts/risks to both SWP operations and the dam's structural integrity during construction is warranted. Such risks/impacts should be discussed with SWP Contractors well in advance since the resulting impacts to SWP operations due to loss of San Luis reservoir storage could result in significant water supply impacts.

In conclusion, the SWC thanks Reclamation and DWR for the opportunity to review and comment upon the draft EIS/EIR. The SWC appreciate the Project's overall goal of increasing dam safety. The SWC looks forward to coordinating with Reclamation and DWR in the future as development of the EIS/EIR proceeds. We appreciate your consideration of our comments. If you have any questions, please feel free to contact me at (916) 447-7357.

Response to Comment SA01-2

In response to this comment, the DEIS/EIR has been updated to include additional detail on the implementation plan for construction of the optional shear key foundation treatment in the South Valley Section of B.F. Sisk under the Crest Raise Alternative (Alternative 3). This additional detail on the reservoir restriction level and the duration of the reservoir restriction have been added to Chapter 2, Section 2.2.3.1.1 of the DEIS/EIR. Revisions to Chapter 2 of the DEIS/EIR are in Chapter 4, Section 4.3, of this FEIS/EIR.

In the past, Reclamation and DWR have coordinated with the CVP and SWP water contractors in the development of the B.F. Sisk Dam Safety of Dams Modification Project. Reclamation and DWR intend to continue outreach briefing activities to the CVP and SWP water contractors through the regular briefings on the project's development and schedule. These briefings would include updates during construction on the phasing of the project's implementation including in the case of the Crest Raise Alternative, the timing of any upcoming construction phases that could limit reservoir operations.

3.2.2 Comment Letter SA02, Justin Fredrickson, California Farm Bureau Federation

Comment SA02-1

The California Farm Bureau Federation ("Farm Bureau") is California's largest farm organization, working to protect family farms and ranches on behalf of its nearly 36,000 members statewide and as part of a nationwide network of more than 5.5 million members. Organized 100 years ago as a voluntary, nongovernmental and nonpartisan organization, it advances its mission throughout the state together with its 53 county Farm Bureaus.

These comments are submitted in relation to the B.F. Sisk Dam Safety of Dams Modification Project Draft EIS / EIR—but also relate to the San Luis Reservoir Low Point Improvement Project ("SLLPIP") and the proposed Pacheco Reservoir Expansion Project.

While the proposed dam safety project focuses solely on dam safety without consideration of potential water supply considerations, the closely related SLLPIP and Pacheco Reservoir Expansion Project both contemplate water supply and reliability improvements. Farm Bureau's sense is that the integrated benefits of all three planned projects are mutually enhancing and should be pursued and supported with this vision in mind.

From a water supply and water reliability standpoint, coordinated operations of the three projects could improve contract deliveries to agricultural and M&I contractors and national wildlife refuges. This, in turn, points to considerable sustainable groundwater management benefits for the area. Fisheries benefits will accrue, both in the Sacramento-San Joaquin River Delta system and downstream of the proposed new Pacheco Reservoir. Furthermore, integrated operations of the projects will improve system-level operational flexibility and drought resilience, while improving the Bureau's ability to balance its obligations to CVP contractors against its various fish and wildlife, water rights, and water quality compliance responsibilities.

With these interrelated objectives in mind, Farm Bureau supports an optimized integration of the three mentioned projects in implementation.

Farm Bureau thanks the Bureau and Department for the opportunity to comment on the proposed B.F. Sisk Dam Safety of Dams Modification Project.

Questions or concerns related to this correspondence may be directed to Justin Fredrickson at 916-561-5673.

Response to Comment SA02-1

Reclamation and the Santa Clara Valley Water District (SCVWD) independently evaluated four alternatives for improving water supply reliability related to low water levels in the San Luis Reservoir in the SLLPIP Feasibility Study. The Draft Feasibility Report for the SLPPIP identified the Pacheco Reservoir Expansion Alternative as the National Economic Development Plan. The Pacheco Reservoir is a wholly separate facility, that would be owned and operated by SCVWD. As a dam safety project, the objectives of the B.F. Sisk Dam SOD Modification Project are also distinct from the SLLPIP objectives. As such, benefits realized by implementation of the B.F. Sisk Dam SOD Modification Project will accrue regardless of the SLLPIP. While the SLLPIP is a separate project with independent utility, construction and operation would be coordinated if this or any other project in the area were to occur concurrent with the B.F. Sisk Dam SOD Modification Project.

3.3 Local Agencies and Local Elected Officials

3.3.1 Comment Letter LA01, Jennifer Harriger, Metropolitan Water District of Southern California

Comment LA01-1

The Metropolitan Water District of Southern California (Metropolitan) has reviewed the Notice of Availability (NOA) of a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the B.F. Sisk Dam Safety of Dams Modification Project (Project). The proposed Project would be constructed at the San Luis Reservoir within Merced County and is intended to prevent destabilization of the Sisk Dam embankment during a seismic event. The U.S. Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR) are the Lead Agencies for the proposed Project.

The Agencies prepared the Draft EIS/EIR to evaluate potential environmental impacts from the proposed Project and examines four different alternatives. The environmental document also analyzes safety concerns with the current dam and potential impacts to water supply deliveries to State and Federal contractors during construction of the proposed Project. Metropolitan is pleased to submit comments on the Draft EIS/EIR to USBR and DWR for their consideration in preparing the Final EIS/EIR. In sum, Metropolitan provides these comments to ensure potential water supply and reliability impacts are adequately addressed.

Metropolitan is a public agency and regional water wholesaler. It is comprised of 26 member public agencies serving approximately 19 million people in portions of six counties in Southern California. Metropolitan's mission is to provide its 5,200 square miles service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Response to Comment LA01-1

This comment is an introductory summary. Responses have been provided below to all detailed comments in the submitted comment letter.

Comment LA01-2

Project Description: Alternative 3, Crest Raise Alternative

The Draft EIS/EIR states the Preferred Alternative is Alternative 3, the Crest Raise Alternative, as it is the only alternative identified with the ability to achieve all the project objectives while balancing adverse environmental effects. Metropolitan supports USBR and DWR's Preferred Alternative 3, as the only alternative that is able to maintain water supply deliveries to State Water Project (SWP) contractors. Specifically, Metropolitan understands that the proposed Preferred Alternative, by allowing the reservoir to operate at its current maximum storage elevation, would:

• *Maintain Table A Deliveries:* Storage in San Luis Reservoir plays a key role in shoring up the amount of contract supply, known as Table A water, that is allocated to contractors by DWR in a given year. In the face of continued threats to Delta water supply reliability, it is imperative that the proposed Project maintain the water supply function of San Luis Reservoir.

• *Maintain Carryover Deliveries:* In addition to current year Table A supplies, San Luis Reservoir stores carryover supplies for contractors under contract provisions that allow for Table A water to be carried over into subsequent years. Carryover storage is an essential part of Metropolitan's water storage portfolio, helping to bolster supplies in drought years and to manage excess supplies in wet years. Over the last twenty years, Metropolitan has taken delivery of as much as 233,000 acre-feet of carryover in a single year, and 115,000 acre-feet per year on average. In recent years, carryover supply has been essential for meeting demands in Metropolitan's service area early in the year, when the SWP Table allocation A has been low and developing.

• *Maintain SWP Operational Flexibility:* Keeping existing maximum storage levels in San Luis Reservoir will allow for DWR and SWP contractors to continue using San Luis Reservoir as a tool for managing non-SWP pump-ins to the California Aqueduct. In the age of limited Table A supplies, groundwater or other supplies are pumped in to the aqueduct and stored or "backed up" into San Luis Reservoir to meet future demands.

• *Maintain Efficient Delivery Timing:* San Luis Reservoir is pivotal in storing water during the wettest months of the year when demands are lower for use during the spring and summer when demands peak. Although the availability of interruptible Article 21 supplies may increase in wet months with a lower operating pool in San Luis Reservoir, contractors may not have sufficient demands to take delivery of this water. In addition, this low demand period serves as a SWP maintenance window, and constrained system capacity could further limit the ability of contractors to take delivery of increased Article 21 supplies.

Because of the need to maintain the above water supply functions, Metropolitan does not support alternatives that would lower the maximum operating pool at San Luis Reservoir.

Response Comment LA01-2

Reclamation and DWR appreciate the clear and concise rationale Metropolitan provides for substantiating support for the Crest Raise Alternative (Alternative 3). As stated in Chapter 26 of the DEIS/EIR, Alternative 3 is the preferred alternative because it was the only alternative identified with the ability to achieve all of the project objectives while balancing adverse environmental effects.

Comment LA01-3

Water Supply Issues: Impacts During Construction

Metropolitan requests additional details on the nature of water supply impacts during construction, including more details on the construction schedule and opportunities to expedite and adjust the schedule to minimize water supply impacts. For example, it is stated in the draft EIS/EIR that the optional south valley section foundation shear key action would require limits on the maximum surface elevation in San Luis Reservoir for two seasons and would limit CVP and SWP deliveries during this construction period. An expedited schedule and flexibility in the timing of this construction period based on existing hydrology and conditions could reduce water supply impacts. Additionally, the term "safe levels" is used in this document (pages ES-8, 2- 13, and 2-15) and needs further definition in terms of water volume and storage elevation.

To minimize overall long-term water supply impacts, if the south valley shear key is needed, Metropolitan prefers that it is included in the Alternative 3 construction schedule, and not in a subsequent separate construction project.

Metropolitan requests that USBR and DWR coordinate with the water contractors to minimize potential operational and water supply impacts during construction.

Response to Comment LA01-3

As was noted in the response above to Comment SA01-2, Chapter 2 of the DEIS/EIR has been updated to include additional detail on the implementation plan for construction of the optional shear key foundation treatment in the SVS of B.F. Sisk under the Crest Raise Alternative (Alternative 3). This additional detail on the reservoir restriction level and the duration of the reservoir restriction have been added to Chapter 2, Section 2.2.3.1.1 of the DEIS/EIR. Revisions to Chapter 2 the DEIS/EIR are in Chapter 4, Section 4.3, of this FEIS/EIR.

Detail has also been added to Chapter 2 Section 2.2.3.1.1 of the DEIS/EIR describing efforts that Reclamation and DWR will make, if development the SVS Shear Key is determined to be necessary, to initiate construction of that component of the overall project in a year that initial water supply forecasts are projecting dry or critically dry conditions that would lessen the magnitude of this reservoir restriction's impact. Given the uncertainty with the timing of these water year types, and the uncertainty that the same conditions would be present in the second year of construction of the shear key, these efforts might be unable to reduce the severity of this impact. Revisions to Chapter 2 the DEIS/EIR are in Chapter 4, Section 4.3, of this FEIS/EIR.

Continued evaluation by Reclamation and DWR of the potential need for implementation of the Shear Key Option during design of the Crest Raise Alternative has identified a low probability that it would be necessary to achieve the safety objectives identified for this project. Given this evaluation, Reclamation and DWR now assume its potential implementation to be unlikely. The decision on its necessity will however be resolved following completion of this FEIS/EIR as engineering design is finalized. Given the continued uncertainty, evaluation of the Shear Key Option under the Crest Raise Alternatives remains in place as a worst-case scenario.

In the past, Reclamation and DWR have coordinated with the CVP and SWP water contractors in the development of the B.F. Sisk Dam Safety of Dams Modification Project. Reclamation and DWR intend to continue outreach briefing activities to the CVP and SWP water contractors through the regular briefings on the project's development and schedule. These briefings would include updates during construction on the phasing of the project's implementation including in the case of the Crest Raise Alternative, the timing of any upcoming construction phases that could limit reservoir operations.

3.3.2 Comment Letter LA02, Curtis Creel, Kern County Water Agency

Comment LA02-1

The Kern County Water Agency (Agency) would like to thank you for the opportunity to comment on the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the B.F. Sisk Dam Safety of Dams Modification Project (Project).

The Agency was created by the California State Legislature in 1961 to contract with the California Department of Water Resources for State Water Project (SWP) water. The Agency has contracts with water districts throughout Kern County to deliver SWP water. Therefore, the Agency is uniquely qualified to provide comments.

Comment 1: The Agency supports Alternative 3 - Crest Raise Alternative.

The Agency is supportive of efforts to prevent destabilization of the dam embankment, improve safety and maintain water supply deliveries to State and Federal contractors. The Crest Raise Alternative proposes to reduce the risks of overtopping from slumping and dam failure from cracking during a seismic event by raising the height of the dam crest 12 feet (pages 2-8 and 2-13). While the Project costs associated with this Alternative are high, maintaining the existing storage capacity of the San Luis Reservoir after construction is a significant benefit to the State Water Project Contractors (Contractors).

Response to Comment LA02-1

Reclamation and DWR have identified the Crest Raise Alternative (Alternative 3) as the preferred alternative because it was the only alternative identified with the ability to achieve all of the project objectives while balancing adverse environmental effects.

Comment LA02-2

Comment 2: The Project would impact San Luis Reservoir storage capacity and reduce SWP deliveries

The Draft ElS/EIR indicates the Project has the potential to affect San Luis Reservoir storage capacity and limit deliveries to State and Federal contractors (page 2-13).

The proposed scope of work will reduce San Luis Reservoir embankment strength during construction resulting in the need to reduce reservoir storage (page 2-13). Although construction actions impacting embankment strength would be "scheduled for completion during times in the water year that San Luis Reservoir is typically drawn down to lower levels," efforts should be made to work with the Contractors to minimize operational impacts to water deliveries.

Response to Comment LA02-2

Reclamation and DWR, as is noted in Chapter 2, Section 2.2.3.1 of the DEIS/EIR and in this comment, will formulate the construction schedule for the Crest Raise Alternative to support the completion of any work that would reduce the reservoir embankment strength, such as foundation or embankment excavation, seasonally to occur during periods of the year when the reservoir is drawn down to lower elevations. This work would also be scheduled for completion each year prior to the refill of San Luis Reservoir back above safe levels to protect embankment stability. It is noted in Chapter 2, Section 2.2.3.1 of the DEIS/EIR, that this could result in delays to refill if the construction schedule is delayed, but the division of specific modification actions scheduled to occur in one drawdown season would be structured to minimize this risk.

In the past, Reclamation and DWR have coordinated with the CVP and SWP water contractors in the development of the B.F. Sisk Dam Safety of Dams Modification Project. Reclamation and DWR intend to continue outreach briefing activities to the CVP and SWP water contractors through the regular briefings on the project’s development and schedule. These briefings would

include updates during construction on the phasing of the project's implementation including in the case of the Crest Raise Alternative, the timing of any upcoming construction phases that could limit reservoir operations.

Chapter 4
Errata Sheets

This chapter contains all text changes to the B.F. Sisk Dam Safety of Dams Modification Project Public DEIS/EIR. Changes in text are signified by strikeouts where text is removed and by italics where text is added.

4.1 Executive Summary

Page ES-7
The last sentence in the fourth paragraph on page ES-7 of the DEIS/EIR is revised as follows:

> The Crest Raise Alternative is ~~currently~~ the Preferred Alternative (as described in more detail in Section 26.3).

4.2 Chapter 1, Introduction

Page 1-5
The heading for Section 1.6, entitled *Summary of Public Scoping,* on page 1-5 of the DEIS/EIR is revised as follows:

1.6 ~~Summary of~~ Public Involvement

1.6.1 Public Scoping

The following paragraph is added after Section 1.6.1 on page 1-5 of the DEIS/EIR:

1.6.2 Final EIS/EIR Development

> *Reclamation published a Notice of Availability for the Draft EIS/EIR in the Federal Register (Vol. 84, No. 71) on Friday, April 12, 2019. DWR published a Notice of Availability for the Draft EIS/EIR on Thursday, April 11, 2019 on the DWR website. Public meetings were held May 7, 2019 and May 8, 2019 in the cities of Sacramento and Los Banos, California. The public comment period concluded May 28, 2019. Copies of all public comments received during the comment period are included in the Final EIS/EIR in Appendix A, Comment Letters, and all responses to comments received are included in Chapter 3 of the Final EIS/EIR. All revisions made to the Draft EIS/EIR are shown in italics (additions) and strikeout text (deletions) in Chapter 4 of the Final EIS/EIR.*

Page 1-6
The third paragraph on page 1-6 of the DEIS/EIR is revised as follows:

> Consistent with 40 Code of Federal Regulations (CFR) Part 46.425, ~~the~~ *this* Final EIS/EIR ~~will identify~~ *identifies* a preferred alternative (also known as the proposed project for CEQA) for implementation ~~(or alternatives, if more than one exists)~~. The preferred alternative ~~will be~~ identified in ~~the~~ *this* Final EIS/EIR *is* based on the information presented in ~~this~~ *the* Draft EIS/EIR, ~~in light of any potential~~ *along with* revisions made in response to comments received on ~~this~~ *the* Draft EIS/EIR. After the Final EIS/EIR is published, Reclamation and DWR will prepare a ROD/NOD to implement ~~a~~ *the* selected alternative. Agencies with regulatory authority issuing permits or other types of approvals for the B.F. Sisk Dam SOD Project may adopt this EIS/EIR, consistent with their own policies and regulations, or use information included as the basis for their own environmental compliance.

4.3 Chapter 2, Project Description

Page 2-8
The last sentence in the first paragraph on page 2-8 of the DEIS/EIR is revised as follows:

> The Crest Raise Alternative is ~~currently~~ the Preferred Alternative (as described in more detail in Section 26.3).

Page 2-13
The third paragraph on page 2-13 of the DEIS/EIR is revised as follows:

> The Crest Raise Alternative would raise the dam crest up to an additional 12 feet to a new crest elevation of 566 feet along the majority of the embankment, tapering at a 2 percent slope to the existing crest elevation at the abutments. *San Luis Reservoir seasonally operates in most years with an approximately 6-month period that CVP and SWP supplies are pumped into the reservoir followed by an approximately 6-month period where the reservoir is drawn down as those stored supplies are delivered to water users.* Any work that would reduce the reservoir embankment strength, such as foundation or embankment excavation, would be timed seasonally and would occur during periods of the year when the reservoir is drawn down to lower elevations. *As the reservoir is drawn down as a part of regular operations, construction would start after the reservoir is drawn below an elevation sufficient to ensure slope stability during any work that would impact embankment strength.* This work would also be scheduled for completion each year prior to the refill of San Luis Reservoir back above safe level to protect embankment stability. *Scheduling work during regular periods of drawdown would allow for uninterrupted water supply deliveries.* ~~This could result in~~ Delays to refill *could potentially occur* if the construction schedule is delayed, but the division of specific modification actions scheduled to occur in one drawdown season would be structured to

minimize this risk. *In addition, contract requirements established by Reclamation and DWR would require use of the second construction shift on this particular component of the overall project in the event that work becomes delayed.*

Implementation of the optional SVS shear key action would require limits on the maximum surface elevation in San Luis Reservoir for two *fill and drawdown* seasons, during the period that the berm foundation would be excavated. This reduction in surface elevation would reduce storage capacity in the reservoir and could limit CVP and SWP deliveries during this construction period. *Continued evaluation by Reclamation and DWR of the potential need for implementation of the Shear Key Option during design of the Crest Raise Alternative has identified a low probability that it would be necessary to achieve the safety objectives identified for this project but will make a final determination as final engineering design for this alternative is completed.*

If implemented, the shear key reservoir restriction would, similar to the restriction required for the Reservoir Restriction Alternative, consist of a 55-foot reduction in the maximum water surface elevation of San Luis Reservoir from the current elevation of 544 feet to 489 feet. Excavation activities for the shear key would initiate when the reservoir is drawn down to 489 feet as a part of regular reservoir operations and would continue through two refill periods during which the reservoir would not be allowed to refill above that level. Reclamation and DWR will also target initiation of the shear key modification if possible, in a year where initial water supply forecasts are projecting dry or critically dry conditions to lessen the magnitude of this reservoir restriction's impact in at least the first year of its two-year implementation window.

4.4 Chapter 26, Other Required Disclosures

Page 26-3

The last sentence in the second paragraph on page 26-3 of the DEIS/EIR is revised as follows:

> All of the alternatives have been analyzed at a comparable level in this ~~Draft~~ EIS/EIR.

The third paragraph on page 26-3 of the DEIS/EIR is revised as follows:

> Reclamation and DWR ~~are seeking~~ *sought* input on the alternatives and their environmental effects during the public review of this ~~Draft~~ EIS/EIR. Reclamation and DWR ~~will consider~~ *considered* feedback received during the public review on the ~~Draft~~ EIS/EIR and the environmental impacts associated with each alternative when developing the Final EIS/EIR and selecting an alternative for implementation. Any alternative could be selected by the lead agencies following the conclusion of environmental review.

The fifth paragraph on page 26-3 of the DEIS/EIR is revised as follows:

> Reclamation and DWR are working closely with Federal, State, and regional agencies to meet regulatory requirements and avoid and minimize impacts and, where necessary, reach agreement on mitigation measures for impacts that cannot be avoided. One important process that integrates many of the applicable regulatory requirements is the Section 404(b)(1) process, as managed by the United States Army Corps of Engineers (USACE) with oversight from the United States Environmental Protection Agency. The 404(b)(1) process considers if the range of potential alternatives evaluated in the EIS/EIR is an appropriate range of "reasonable" and "practicable" alternatives using the best available information. USACE then determines the Least Environmentally Damaging Practicable Alternative (LEDPA) to meet requirements of NEPA, Sections 401 and 404 of the Clean Water Act, and Section 14 of the Rivers and Harbor Act, with consideration of compliance with the Federal Endangered Species Act and the National Historic Preservation Act. ~~USACE's 404(b)(1) LEDPA determination is expected to be attached to the Final EIS/EIR.~~
>
> *This EIS/EIR provides a substantive portion of the environmental information necessary for USACE to determine the LEDPA consistent with Section 404(b)(1) guidelines.*

Page 26-4

The first sentence in the second paragraph on page 26-4 of the DEIS/EIR is revised as follows:

> Section 1505.2(b) of the CEQ Regulations requires the NEPA lead agency to identify the environmentally preferable alternative in a ~~Record of Decision.~~ *ROD.*

The last sentence in the third paragraph on page 26-4 of the DEIS/EIR is revised as follows:

> Reclamation and DWR ~~will consider~~ *considered* feedback during the public review phase of the Draft EIS/EIR on the environmental benefits and impacts of each alternative when developing the Final EIS/EIR and ~~Record of Decision~~ *ROD*.

Page 26-5

The second sentence in the first paragraph on page 26-5 of the DEIS/EIR is revised as follows:

> Table 26-1 presents a summary of the project issues identified during the ~~scoping period~~ *public involvement process*.

4.5 Chapter 27, Cumulative Effects

Page 27-6
The following row in Table 27-2 on page 27-6 of the DEIS/EIR is revised as follows:

California Department of Water Resources, United States Department of the Interior, Bureau of Reclamation	Bay Delta Conservation Plan/ California WaterFix Final Environmental Impact Report/ Environmental Impact Statement	The Bay Delta Conservation Plan/California WaterFix/*Delta Conveyance Project* would update the State Water Project by adding new points of diversion in the north Delta and by providing for large-scale species conservation.	2016	50 years

Page 27-7
The following row is added to Table 27-2 on page 27-7 of the DEIS/EIR:

United States Department of the Interior, Bureau of Reclamation and Santa Clara Valley Water District	*San Luis Low Point Improvement Project Draft Feasibility Report*	*The Pacheco Reservoir Expansion Alternative Plan includes construction of a new dam and reservoir on Pacheco Creek 0.5 mile upstream from the existing North Fork Dam and would inundate most of the existing Pacheco Reservoir.*	*2019*	*20 years*

The following source is added to Table 27-2 on page 27-7 of the DEIS/EIR:

Reclamation and Santa Clara Valley Water District (SCVWD) 2019;

The heading for Section 27.2.5.1, entitled *Bay-Delta Conservation Plan/California Water Fix*, on page 27-7 of the DEIS/EIR is revised as follows:

27.2.5.1 Bay-Delta Conservation Plan/California WaterFix/*Delta Conveyance Project*

Page 27-8
The second paragraph on page 27-8 of the DEIS/EIR is revised as follows:

> The Final EIS/EIR for the BDCP/California WaterFix that identified the California WaterFix for implementation was released in December 2016. Biological Opinions for the California WaterFix were released in June 2017. *In July 2018, DWR released a Draft Supplemental EIR/EIS for California WaterFix, which analyzes several proposed changes designed to reduce the project's footprint and costs, and minimize impacts on environmental resources in the Delta (DWR and Reclamation 2018). In May 2019, the California Water Fix effort was halted to allow for a new environmental evaluation of a modified Delta Conveyance Project that would shift from a previously proposed two conveyance tunnels down to one tunnel (DWR 2019). That evaluation is currently underway by DWR in coordination with the Delta Conveyance Design and Construction Authority (DWR 2019).*

Page 27-9
The following paragraph is added after Section 27.2.5.3 on page 27-9 of the DEIS/EIR:

> ***27.2.5.4 San Luis Low Point Improvement Project Draft Feasibility Report***
> *The San Luis Low Point Improvement Project (SLLPIP) Draft Feasibility Report is a joint study by Reclamation, in cooperation with SCVWD. The purpose of the feasibility report is to determine the potential type and extent of Federal and regional interest in a potential project to address water supply reliability and schedule certainty issues for SCVWD associated with low water levels in San Luis Reservoir (Reclamation and SCVWD 2019).*
>
> *In the draft feasibility report, the Pacheco Reservoir Expansion Alternative Plan is identified as the preliminary National Economic Development (NED) Plan and is also the Locally Preferred Plan by SCVWD. The Pacheco Reservoir Expansion Alternative includes the removal of the existing dam, development of a new reservoir, a new earthen dam and spillway, new pipelines and tunnels, a new pump station, and associated channel modifications, a new regulating tank at Pacheco Pumping Plant, and access improvements. The new dam and expanded reservoir would be constructed on Pacheco Creek 0.5 mile upstream from the existing North Fork Dam and would inundate most of the existing Pacheco Reservoir (Reclamation and SCVWD 2019).*

The heading for Section 27.2.5.4, entitled *San Luis Reservoir State Recreation Area Resource Management Plan/General Plan*, on page 27-9 of the DEIS/EIR is revised as follows:

27.2.5.4*5* **San Luis Reservoir State Recreation Area Resource Management Plan/General Plan**

Page 27-10
The heading for Section 27.2.5.5, entitled *San Luis Transmission Project*, on page 27-10 of the DEIS/EIR is revised as follows:

27.2.5.~~5~~*6* **San Luis Transmission Project**

The heading for Section 27.2.5.6, entitled *San Luis Solar Project*, on page 27-10 of the DEIS/EIR is revised as follows:

27.2.5.~~6~~*7* **San Luis Solar Project**

Page 27-13
The second sentence in the third paragraph on page 27-13 of the DEIS/EIR is revised as follows:

> Implementation of the BDCP/California WaterFix/*Delta Conveyance Project*/California EcoRestore could result in changed Delta Region operations and habitat health with the implementation of conservation and restoration measures designed to improve the health of the Delta ecosystem alongside improving water supply and water quality conditions.

Page 27-14

The following sentence is added to the beginning of the first paragraph on page 27-14 of the DEIS/EIR:

> *The construction and operation of the preliminary Pacheco Reservoir Expansion Alternative detailed in the SLLIP Draft Feasibility Report would not impact Delta water quality (Reclamation and SCVWD 2019).*

The third sentence in the first paragraph on page 27-14 of the DEIS/EIR is revised as follows:

> Additionally, any increases in south-of-Delta export as a result of the ~~California WaterFix~~ *Delta Conveyance Project* would only follow improvements in the Delta ecosystem's health and improved water quality conditions in the Delta Region as a result of both the ~~California WaterFix~~ *Delta Conveyance Project* and California EcoRestore's restoration actions and would be limited by the reduced storage capacity in San Luis Reservoir.

The second paragraph on page 27-14 of the DEIS/EIR is revised as follows:

> The Reservoir Restriction Alternative could change south-of-Delta CVP and SWP exports and Delta outflow. As was noted above, implementation of the BDCP/California WaterFix/*Delta Conveyance Project*/California EcoRestore could result in changed Delta Region operations and habitat health. *Construction and operation of the expanded Pacheco Reservoir under the SLLPIP, would not substantially change south-of-Delta exports and would not impact Delta outflow.*

The second sentence in the third paragraph on page 27-14 of the DEIS/EIR is revised as follows:

> This would result in an increase in Delta outflow which along with the ~~California WaterFix~~ *Delta Conveyance Project* and California EcoRestore's restoration actions, would improve the Delta ecosystem's health and water quality conditions.

Page 27-16

The second sentence in the fourth paragraph on page 27-16 of the DEIS/EIR is revised as follows:

> Implementation of the proposed alternatives for the BDCP/California WaterFix/*Delta Conveyance Project* and CVP M&I WSP could result in short-term and long-term changes in water supply availability.

The following paragraph is added after the fourth paragraph on page 27-16 of the DEIS/EIR:

> *The operation of the Pacheco Reservoir Expansion Alternative detailed in the SLLIP Draft Feasibility Report would result in a slight decrease in deliveries to CVP South-of-Delta agricultural contractors. SWP South-of-Delta deliveries would remain unchanged (Reclamation and SCVWD 2019).*

Page 27-19

The last sentence in the second paragraph on page 27-19 of the DEIS/EIR is revised as follows:

> Potential projects that could contribute to cumulative effects when considered with this alternative include the California High Speed Rail Project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP, the San Luis Transmission Project, and the San Luis Solar Project, because short-term construction activities associated with these projects would occur ~~in Merced County~~ near San Luis Reservoir.

Page 27-22

The last sentence in the second paragraph on page 27-22 of the DEIS/EIR is revised as follows:

> Potential projects that could contribute to cumulative effects when considered with this alternative include the California High Speed Rail Project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP, the San Luis Transmission Project, and the San Luis Solar Project, because short-term construction activities and long-term operational activities associated with these projects could potentially occur in ~~Merced County~~ *the project area*.

Page 27-23

The last sentence in the first paragraph on page 27-23 of the DEIS/EIR is revised as follows:

> Potential projects that could contribute to cumulative effects when considered with this alternative include the California High Speed Rail Project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP, the San Luis Transmission Project, and the San Luis Solar Project, because long-term operational activities associated with these projects could occur in ~~Merced County~~ *the project area*.

The last sentence in the third paragraph on page 27-23 of the DEIS/EIR is revised as follows:

> Potential projects that could contribute to cumulative effects when considered with this alternative include the California High Speed Rail Project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP, the San Luis Transmission Project, and the San Luis Solar Project, because short-term construction activities and long-term operational activities associated with these projects could potentially occur in ~~Merced County~~ *the project area*.

Page 27-24

The last sentence in the first paragraph on page 27-24 of the DEIS/EIR is revised as follows:

> Potential projects that could contribute to cumulative effects when considered with this alternative include the California High Speed Rail Project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP, the San Luis Transmission Project, and the San Luis Solar Project, because long-term operational activities associated with these projects could occur in ~~Merced County~~ *the project area*.

Page 27-34

The last sentence in the first paragraph on page 27-34 of the DEIS/EIR is revised as follows:

> Construction of projects considered for cumulative impacts ~~in Merced County including~~ *include* the California High Speed Rail Project, the *SLLPIP*, the San Luis Reservoir SRA RMP/GP, and development projects related to projected growth in ~~the~~ *Merced* County could create additional construction traffic in the area of analysis during the same time period.

The following paragraph is added after the second paragraph on page 27-34 of the DEIS/EIR:

> *Construction-related trips under the Pacheco Reservoir Expansion Alternative selected for the SLLPIP Draft Feasibility Report would impact traffic on SR 152 eastbound at I-5 and SR 33 northbound at I-5 segments in the a.m. and p.m. peak hours.*

Page 27-35

The last sentence in the first paragraph on page 27-35 of the DEIS/EIR is revised as follows:

> **However, the alternatives' incremental contribution to significant cumulative impacts on traffic flow in the area of analysis could be cumulatively considerable if construction of the Reservoir Restriction or Crest Raise Alternatives, and *construction of the SLLPIP or* the California High Speed Rail's segment located closest to the reservoir would occur at the same time.**

The second sentence in the second paragraph on page 27-35 of the DEIS/EIR is revised as follows:

> The presence of additional heavy construction equipment and slower moving traffic on regional and local roads around San Luis Reservoir and B.F. Sisk Dam related to the California High Speed Rail project, *the SLLPIP*, the San Luis Reservoir SRA RMP/GP and development projects related to projected growth in Merced County would increase risks related to traffic safety.

The following sentence is added to the end of the third paragraph on page 27-35 of the DEIS/EIR:

> ***Therefore, with this mitigation, the alternatives' incremental contribution to significant cumulative traffic safety impacts would not be cumulatively considerable.***

Page 27-45

The third sentence in the first paragraph on page 27-45 of the DEIS/EIR is revised as follows:

> Of the cumulative projects considered, the proposed actions of the BDCP/California WaterFix*/Delta Conveyance Project*, California High Speed Rail Project, *the SLLPIP*, CVP M&I WSP, San Luis Reservoir State Recreation Area RMP/GP, and the San Luis Transmission Project could result in short-term and long-term changes in land use.

The fifth sentence in the first paragraph on page 27-45 of the DEIS/EIR is revised as follows:

> Construction and implementation of conservation measures included in the BDCP/California WaterFix*/Delta Conveyance Project* could result in incompatibilities with local land use regulations, depending on the final locations.

The third sentence in the third paragraph on page 27-45 of the DEIS/EIR is revised as follows:

> Of the cumulative projects considered, the proposed actions of the BDCP/California WaterFix*/Delta Conveyance Project*, California High Speed Rail Project, *the SLLPIP*, CVP M&I WSP, San Luis Reservoir State Recreation Area RMP/GP, and the San Luis Transmission Project could result in short-term and long-term changes in land use.

The fifth sentence in the third paragraph on page 27-45 of the DEIS/EIR is revised as follows:

> Construction and implementation of conservation measures included in the BDCP/California WaterFix*/Delta Conveyance Project* could result in incompatibilities with local land use regulations, depending on the final locations.

Page 27-46

The third sentence in the second paragraph on page 27-46 of the DEIS/EIR is revised as follows:

> Of the cumulative projects considered, the proposed actions of the BDCP/ California WaterFix*/Delta Conveyance Project*, California High Speed Rail Project, *the SLLPIP*, CVP M&I WSP, San Luis Reservoir SRA RMP/GP, and the San Luis Transmission Project could result in short-term and long-term changes in agricultural resources.

Page 27-47

The third sentence in the first paragraph on page 27-47 of the DEIS/EIR is revised as follows:

> Of the cumulative projects considered, the proposed actions of the BDCP/California WaterFix*/Delta Conveyance Project*, California High Speed Rail Project, *the SLLPIP*, CVP M&I WSP, San Luis Reservoir SRA RMP/GP, and the San Luis Transmission Project could result in short-term and long-term changes in agricultural resources.

Page 27-48
The following sentence is added after the first paragraph on page 27-48 of the DEIS/EIR:

> *No cumulative recreation impacts would result from the SLLPIP, as construction of the Pacheco Reservoir Expansion Alternative would have no impact on San Luis Reservoir State Recreation Area use areas.*

Page 27-53
The first sentence of the fifth paragraph on page 27-53 of the DEIS/EIR is revised as follows:

> Construction of projects considered for cumulative impact in Merced County including the California High Speed Rail project, *the SLLPIP*, the San Luis Transmission Project, and the San Luis Solar Project and development projects related to projected growth in the county could create construction-related risks during the same time period.

Page 27-54
The third sentence of the third paragraph on page 27-54 of the DEIS/EIR is revised as follows:

> Over time, construction debris from the California High Speed Rail, *the SLLPIP*, the San Luis Solar Project, and San Luis Transmission Project construction as well as from future growth and development throughout Merced County could however cause the landfill to reach capacity more quickly than originally planned when the facility was developed.

Page 27-56
The first sentence of the third paragraph on page 27-56 of the DEIS/EIR is revised as follows:

> Construction of projects considered for cumulative impact in Merced County including the California High Speed Rail project, *the SLLPIP*, the San Luis Transmission Project, and the San Luis Solar Project and development projects related to projected growth in the county could create construction-related risks during the same time period.

Page 27-57
The third sentence of the sixth paragraph on page 27-57 of the DEIS/EIR is revised as follows:

> Over time, construction debris from the California High Speed Rail, *the SLLPIP*, the San Luis Solar Project, and San Luis Transmission Project construction as well as from future growth and development throughout Merced County could however cause the landfill to reach capacity more quickly than originally planned when the facility was developed.

4.6 Chapter 28, Consultation, Coordination, and Compliance

Page 28-58
The third paragraph on page 28-58 of the DEIS/EIR is revised as follows:

28.2.2 ~~Public Meetings and Comments on the Draft Supplemental Environmental Impact Statement/Environmental Impact Report~~ *Final EIS/EIR Development*

~~This document will be~~ *The Draft EIS/EIR was* released to the public for ~~60~~ *45* days of review and comment, as required by NEPA and CEQA. ~~Public meetings will be held~~ *Reclamation published a Notice of Availability* for the Draft EIS/EIR ~~and comments on~~ *in the Federal Register (Vol. 84, No. 71) on Friday, April 12, 2019. DWR published a Notice of Availability for the Draft EIS/EIR on Thursday, April 11, 2019 on the DWR website. Public meetings were held May 7, 2019 and May 8, 2019 in* the ~~Draft EIS/EIR will be accepted at the meetings as well as throughout the~~ *cities of Sacramento and Los Banos, California. The* public comment period *concluded May 28, 2019.*

The last sentence in the fifth paragraph on page 28-58 of the DEIS/EIR is revised as follows:

The USFWS ~~will receive~~ *received* a copy of the Draft EIS/EIR for review and Reclamation will be requesting concurrence that the project is not likely to affect listed species or critical habitat.

Page 28-59
The first paragraph on page 28-59 of the DEIS/EIR is revised as follows:

The Crest Raise Alternative has the potential to impact wetlands. Therefore, Reclamation *is* ~~will~~ *coordinating* ~~coordinate~~ with the Corps Regulatory Division regarding ~~any~~ development of a Clean Water Act Section 404 permit. *The project actions covered by this permit are fully evaluated in this EIS/EIR.*

The second paragraph on page 28-59 of the DEIS/EIR is revised as follows:

The Crest Raise Alternative has the potential to impact wetlands. Therefore, Reclamation will coordinate with the USEPA regarding *the* ~~any~~ development of a Clean Water Act Section 404 permit. *The project actions covered by this permit are fully evaluated in this EIS/EIR.* The USEPA ~~will receive~~ *received* a copy of the Draft EIS/EIR for review.

The second sentence in the third paragraph on page 28-59 of the DEIS/EIR is revised as follows:

The NOI/NOP was sent to CDPR and CDPR ~~will~~ also ~~receive~~ *received* a copy of ~~this~~ *the* Draft EIS/EIR for their review.

The last sentence in the fifth paragraph on page 28-59 of the DEIS/EIR is revised as follows:

> The Central Valley RWQCB ~~will receive~~ *received* a copy of the Draft EIS/EIR for review.

Page 28-60
The last sentence in the first paragraph on page 28-60 of the DEIS/EIR is revised as follows:

> The CDFW ~~will receive~~ *received* a copy of the Draft EIS/EIR for review.

The second sentence in the second paragraph on page 28-60 of the DEIS/EIR is revised as follows:

> These local governments ~~will receive~~ *received* a copy of the Draft EIS/EIR for review.

4.7 Appendix J, References

Page J-28
The following reference is added under Section J.27 on page J-28 of the DEIS/EIR:

> *California Department of Water Resources (DWR). 2019. Delta Conveyance Next Steps. Accessed on: 08 12 2019. Available at: https://water.ca.gov/News/Blog/2019/June-2019/Delta-Conveyance-Next-Steps.*
>
> *California Department of Water Resources (DWR) and United States Department of the Interior, Bureau of Reclamation (Reclamation). 2018. California WaterFix Draft Supplemental Environmental Impact Report/ Environmental Impact Statement. July 2018. Accessed on: 08 12 2019. Available at: https://ceqanet.opr.ca.gov/2008032062/14*

Page J-29
The following reference is added under Section J.27 on page J-29 of the DEIS/EIR:

> *United States Department of the Interior, Bureau of Reclamation (Reclamation) and Santa Clara Valley Water District (SCVWD). 2019. San Luis Low Point Improvement Project Draft Feasibility Report. Accessed on: 05 23 2019. Available at: https://www.usbr.gov/mp/sllpp/.*

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Chapter 5
Mitigation Monitoring and Reporting Program

5.1 Introduction

The proposed B.F. Sisk Dam SOD Project would result in the potential for significant environmental impacts associated with air quality, greenhouse gas emissions, visual resources, noise and vibration, traffic and transportation, hazards and hazardous materials, terrestrial resources, recreation, and cultural resources. Mitigation measures have been incorporated into the B.F. Sisk Dam SOD Project to reduce impacts to less than significant levels. The mitigation measures for the B.F. Sisk Dam SOD Project must be adopted by the DWR, in conjunction with adoption of the EIR.

Section 21081.6 of the Public Resources Code (PRC) and CEQA Guidelines section 15097 require the Lead Agency for each project that is subject to CEQA to monitor performance of the mitigation measures included in any environmental document to ensure that implementation does, in fact, take place. The PRC requires the Lead Agency to adopt a monitoring and reporting program for assessing and ensuring the implementation of required mitigation measures.

In accordance with PRC Section 21081.6, DWR has developed this Mitigation Monitoring and Reporting Program (MMRP) for the B.F. Sisk Dam SOD Project. The purpose of the MMRP is to ensure activities associated with transferring water comply with all applicable environmental mitigation requirements.

5.2 Mitigation and Monitoring

Table 5-1 lists the mitigation measures identified in the DEIS/EIR, responsible parties, method for verification, and the time frame for implementation. DWR, as the CEQA lead agency, is the ultimate agency responsible to make sure that mitigation measures are implemented. Other parties, including the Bureau of Reclamation, who will be managing the construction constract, and the construction contractor, will have a role in implementation.

Table 5-1.
Mitigation Measures

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
AQ-1	**Reduce emissions from off-road construction equipment by using Tier 4 construction equipment** 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. 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.	Reclamation, DWR, and construction contractors	Documentation on file with DWR and Reclamation	Prior to and during construction
AQ-2	**Reduce exhaust emissions from on-road trucks** All haul trucks, vendor trucks, or other vehicles operating onsite with on-road engines will meet model year 2015 or better emission standards.	Reclamation, DWR, and construction contractors	Documentation on file with DWR and Reclamation and field monitor verification	Prior to and during construction
AQ-3	**Implement Best Available Mitigation Measures for Construction Phase** As required by the SJVAPCD, the project must apply the following best available mitigation measures for the construction phase: • 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.	Reclamation, DWR, and construction contractors	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
	• With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. • 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. *(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.)* • 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	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.	Reclamation, DWR, and construction contractors	Documentation on file with DWR and Reclamation	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
VIS-1	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.	Reclamation, DWR, and construction contractors	Field monitor verification	Prior to and during construction
NOI-1	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: • 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	Reclamation, DWR, and construction contractors	NCP on file with Reclamation and DWR. Field monitor verification	Plan development: prior to construction Plan implementation and monitoring: during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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.			
NOI-2	A Blasting Plan for construction shall be prepared and followed that includes the following: • Identification of blast officer; • 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.	Reclamation, DWR, and construction contractors	Blasting Plan on file with Reclamation and DWR Field monitor verification	Plan development: prior to issuing construction contract Plan implementation and monitoring: during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	• 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; • 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			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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	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. All mitigation requirements will be included in bid documents and construction contracts.	Reclamation, DWR, and construction contractors	Field monitor verification	Survey: prior to construction Implementation and monitoring of noise reducing measures: during construction
TR-1	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 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	Reclamation, DWR, and construction contractors	Field monitor verification and documentation on file with Reclamation and DWR	Traffic Control, and Health and Safety Plan development: Prior to construction. Implementation and monitoring: during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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. 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 will 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.			
HAZ-1	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 Cleanup Site (LUST) 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. 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,	Reclamation, DWR, and construction contractors	Documentation on file with Reclamation, DWR, and field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	including evacuation procedures, spill containment and cleanup, and reporting a release. 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): • 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, DWR, and construction contractors	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, DWR, and construction contractors	Field monitor verification	During construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
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, DWR, and construction contractors	Documentation on file with Reclamation and DWR	Prior to and during construction
TERR-1	**Special-status Plant Species and Special-Status Natural Communities** 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), 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). 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: 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. 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	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
	type and extent of special-status plant populations affected, compensatory mitigation will entail: • 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. • 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	**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.	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
	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.			
TERR-3	**Special-Status Amphibians** Before and during construction: • 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 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	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
	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. • 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
	• 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	**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.	Reclamation and DWR	Field verification	Prior to construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
TERR-5	**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.	Reclamation and DWR	Field verification	Prior to construction
TERR-6	**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.	Reclamation and DWR	Field verification	Prior to and during construction
TERR-7	**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.	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
TERR-8	**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. • 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	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
	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	**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. 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 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	Reclamation and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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. 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. In addition to the above survey requirements, the following measures shall be implemented to reduce project impacts to burrowing owls: • 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			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	owls have left the burrow. The burrows shall then be excavated with a qualified biologist present. Construction shall not proceed until the 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 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	**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.	Reclamation and DWR	Field verification	Prior to construction
TERR-11	**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.	Reclamation and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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 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.			
TERR-12	**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 2010; see Appendix I, Biological Resources Appendix of the DEIS/EIR). 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). The Proponent shall implement San Joaquin kit fox protection measures. The following measures, which are intended to reduce direct and indirect project	Reclamation and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	impacts on San Joaquin kit foxes, are derived from the *San Joaquin Kit Fox Survey Protocol for the Northern Range* (USFWS 1999a) and the *Standardized Recommendations for Protection of the San Joaquin Kit Fox* (USFWS 1999b). The following measures shall be implemented for construction areas at San Luis Reservoir: 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 1999b). 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 construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence. Off-road vehicle and equipment movement will be limited to the 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 ration, or other compensation ratios approved by the USFWS and the CDFW.			
TERR-13	**American Badger** 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	Reclamation and DWR	Field verification	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	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: 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. 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. 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.			
TERR-14	**Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp** 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, but are not limited to, compensating for impacts at a 2:1 ratio for preservation and at a 1:1 ratio for creation.	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
TERR-15	**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. 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. Nighttime vehicle traffic shall be kept to a minimum on non-maintained roads with a maximum speed of 15 miles per hour. To minimize disturbance to wildlife, temporary and permanent exterior lighting shall be installed such that: (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

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
TERR-16	**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.** *Mitigation Measure TERR -16a.* 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: 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. *Mitigation Measure TERR-16b*. 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.	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
	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. 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. 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 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. 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.			

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
REC-1	**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 *San Luis Reservoir SRA Resource Management Plan/General Plan (RMP/GP)* 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 *San Luis Reservoir SRA RMP/GP* (Reclamation and CDPR 2013): • 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 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. 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.	Reclamation and DWR	Documentation on file with Reclamation, DWR, and field verification	Prior to construction
CR-1	**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** 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	Reclamation and DWR	Documentation on file with Reclamation and DWR	Prior to and during construction

Measure No.	Mitigation Measure	Responsible Party	Method of Verification	Timing of Verification
	Proposed Action objectives. No adverse effects/significant impacts to historic properties, historical resources, or other cultural resources were identified under the Reservoir Restriction Alternative. 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 will be 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. Once an alternative is selected and prior to signing a Record of Decision, Reclamation will complete the additional historic property identification and evaluation efforts under the negotiated agreement document, 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 will be formalized in an agreement document in compliance with 36 CFR Part 800.6(c). DWR will be a party to this agreement document, and implementation of measures identified to avoid, minimize impacts to, and/or mitigate adverse effects to historic properties will satisfy State lead agency obligations with respect to CEQA consistent with California Code of Regulations Section 15126.4.			

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Chapter 6
References

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B.F. Sisk Dam Safety of Dams Modification Project Environmental Impact Statement / Environmental Impact Report

Appendix A: Comment Letters

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FA01

MAY 2 2 2019

Ernest A. Conant
Regional Director, Mid-Pacific Region
Bureau of Reclamation
2800 Cottage Way
Sacramento, California 95825

Subject: Draft Environmental Impact Statement for B.F. Sisk Dam Safety of Dams Modification Project, Merced County, California (EIS No. 20190056)

Dear Mr. Conant:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. The Bureau of Reclamation, through the Preferred Alternative, known as the Crest Raise Alternative, proposes to raise the dam twelve feet in order to prevent destabilization of the dam embankment, reduce safety concerns, and maintain water supplies to State and Federal contractors during a seismic event.

EPA is aware of another project in the planning area and for which the Draft EIS will be released for public comment in the near future. The San Luis Low Point Improvement Project proposes to address the water supply and water quality issues at San Luis reservoir through a possible dam raise, a new, lower intake, or an expansion of nearby Pacheco reservoir. Reclamation is a co-sponsor for this project along with the Santa Clara Valley Water District. 1

The San Luis Low Point Improvement Project is not mentioned in the Draft EIS; however, the project has overlapping alternatives and environmental impacts with the B.F. Sisk Dam Safety project. Possible overlapping impacts include, but are not limited to, air quality impacts from truck trips, recreation impacts to campgrounds and other recreational sites used as staging areas, and traffic and transportation impacts. The San Luis Low Point Improvement Project is a reasonably foreseeable project and EPA recommends that this project be included in an updated cumulative impacts analysis in the Final EIS, along with any specific mitigation measures that can be implemented to reduce potential cumulative impacts.

We note that effective October 22, 2018, EPA no longer includes ratings in our comment letters. Information about this change and EPA's continued roles and responsibilities in the review of federal actions can be found on our website at: https://www.epa.gov/nepa/epa-review-process-under-section-309-clean-air-act.

EPA appreciates the opportunity to review this Draft EIS, and we are available to discuss our comments. When the Final EIS is released for public review, please send one CD copy to the address above (mail code: TIP-2). If you have any questions, please contact me at 415-947-4161, or contact Stephanie Gordon, the lead reviewer for this project. Ms. Gordon can be reached at 415-972-3098 or gordon.stephanieS@epa.gov.

Sincerely,

Connell Dunning

Connell Dunning, Acting Manager
Environmental Review Branch

cc via email: Jamie LeFevre, Bureau of Reclamation
Mynul Chowdhury, Bureau of Reclamation
Jerry Snow, California Department of Water Resources

May 24, 2019

SA01

Ms. Shelly Amrhein
Department of Water Resources
P.O. Box 942836
Sacramento, CA 942836-0001

Re: B.F. Sisk Dam Safety of Dams Modification Project Draft EIS/EIR

Dear Ms. Amrhein:

The State Water Contractors ("SWC") appreciate the opportunity to review and comment on the Draft Environmental Impact Statement/Environmental Impact Report ("EIS/EIR") prepared by the Bureau of Reclamation ("Reclamation") and the California Department of Water Resources ("DWR") for the B.F. Sisk Dam Safety of Dams Modification Project (the "Project"). We appreciate the step forward to address seismic issues at Sisk Dam. The SWC understand that Reclamation is serving as the lead agency under the National Environmental Policy Act ("NEPA") and that DWR is serving as the lead agency under the California Environmental Quality Act ("CEQA"). These comments are provided by the SWC for both NEPA and CEQA.

The SWC is a nonprofit mutual benefit corporation that represents and protects the common interests of its 27 members in California's State Water Project ("SWP"). Collectively, the SWC member agencies utilize the SWP and other facilities to deliver water to more than 26 million residents throughout the state and to more than 750,000 acres of agricultural lands. Hence, the SWC have an interest in any project that may impact SWP water supplies and operations.

Given the choice between Alternative 1 (no action), Alternative 2 (Permanent Reservoir restriction of 55 feet and a loss of 700,000 acre-feet of storage), or Alternative 3 (construct stability berms, face filters, and increase total freeboard), our preference would be for Alternative 3. Alternative 1 would leave an unmitigated risk to the public, and Alternative 2 would be detrimental to operations and yield of both the SWP and Central Valley Project ("CVP"). A general comment is that the EIR/EIS' listed impacts to water supply, groundwater, and recreation impacts for Alternative 2 should be rated as "significant" rather than the given "no impact" or "less than significant" labels.

1

[1] The SWC members agencies are: Alameda County Flood Control and Water Conservation District Zone 7; Alameda County Water District; Antelope Valley-East Kern Water Agency; Casitas Municipal Water District; Castaic Lake Water Agency; Central Coastal Water Authority; City of Yuba City; Coachella Valley Water District; County of Kings; Crestline-Lake Arrowhead Water Agency; Desert Water Agency; Dudley Ridge Water District; Empire-West Side Irrigation District; Kern County Water Agency; Littlerock Creek Irrigation District; Metropolitan Water District of Southern California; Mojave Water Agency; Napa County Flood Control and Water Conservation District; Oak Flat Water District; Palmdale Water District; San Bernardino Valley Municipal Water District; San Gabriel Valley Municipal Water District; San Gorgonio Pass Water Agency; San Luis Obispo County Flood Control & Water Conservation District; Santa Clara Valley Water District; Solano County Water Agency; and Tulare Lake Basin Water Storage District.

1121 L Street, Suite 1050 • Sacramento, California 95814-3944 • 916.447.7357 • FAX 916.447-2734 • www.swc.org

In addition, we have concerns regarding the potential significant and unavoidable "temporary interruptions" to the SWP operations (Chapter 5). More thorough analysis of the potential impacts/risks to both SWP operations and the dam's structural integrity during construction is warranted. Such risks/impacts should be discussed with SWP Contractors well in advance since the resulting impacts to SWP operations due to loss of San Luis reservoir storage could result in significant water supply impacts. 2

In conclusion, the SWC thanks Reclamation and DWR for the opportunity to review and comment upon the draft EIS/EIR. The SWC appreciate the Project's overall goal of increasing dam safety. The SWC looks forward to coordinating with Reclamation and DWR in the future as development of the EIS/EIR proceeds. We appreciate your consideration of our comments. If you have any questions, please feel free to contact me at (916) 447-7357.

Sincerely,

Jennifer Pierre
General Manager

CALIFORNIA FARM BUREAU FEDERATION
OFFICE OF THE GENERAL COUNSEL
2300 RIVER PLAZA DRIVE, SACRAMENTO, CA 95833-3293 • PHONE (916) 561-5665 • FAX (916) 561-5691

SA02

May 28, 2019

Via electronic mail:
jlefevre@usbr.gov
rochelle.amrhein@water.ca.gov

Jamie LeFevre
Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way MP-152
Sacramento, CA 95825

Shelly Amrhein
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Re: B.F. Sisk Dam Safety of Dams Modification Project

Mmes. LeFevre and Amrhein:

The California Farm Bureau Federation ("Farm Bureau") is California's largest farm organization, working to protect family farms and ranches on behalf of its nearly 36,000 members statewide and as part of a nationwide network of more than 5.5 million members. Organized 100 years ago as a voluntary, nongovernmental and nonpartisan organization, it advances its mission throughout the state together with its 53 county Farm Bureaus.

These comments are submitted in relation to the B.F. Sisk Dam Safety of Dams Modification Project Draft EIS / EIR—but also relate to the San Luis Reservoir Low Point Improvement Project ("SLLPIP") and the proposed Pacheco Reservoir Expansion Project. 1

While the proposed dam safety project focuses solely on dam safety without consideration of potential water supply considerations, the closely related SLLPIP and Pacheco Reservoir Expansion Project both contemplate water supply and reliability improvements. Farm Bureau's sense is that the integrated benefits of all three planned projects are mutually enhancing and should be pursued and supported with this vision in mind.

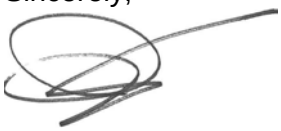
From a water supply and water reliability standpoint, coordinated operations of the three projects could improve contract deliveries to agricultural and M&I contractors and national wildlife refuges. This, in turn, points to considerable sustainable groundwater management benefits for the area. Fisheries benefits will accrue, both in the Sacramento-San Joaquin River Delta system and downstream of the proposed new Pacheco Reservoir. Furthermore, integrated operations of the projects will improve system-level operational flexibility and drought resilience, while improving the Bureau's ability to balance its obligations to CVP contractors against its various fish and wildlife, water rights, and water quality compliance responsibilities.

With these interrelated objectives in mind, Farm Bureau supports an optimized integration of the three mentioned projects in implementation.

Farm Bureau thanks the Bureau and Department for the opportunity to comment on the proposed B.F. Sisk Dam Safety of Dams Modification Project.

Questions or concerns related to this correspondence may be directed to Justin Fredrickson at 916-561-5673.

Sincerely,



Justin Fredrickson

JF/bzc

LA01

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Office of the General Manager

May 24, 2019

Via Electronic and Regular Mail

Ms. Shelly Amrhein
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Dear Ms. Amrhein:

Notice of Availability for the Sisk Dam Safety of Dams Modification Project

The Metropolitan Water District of Southern California (Metropolitan) has reviewed the Notice of Availability (NOA) of a Draft Environmental Impact Statement / Environmental Impact Report (EIS/EIR) for the B.F. Sisk Dam Safety of Dams Modification Project (Project). The proposed Project would be constructed at the San Luis Reservoir within Merced County and is intended to prevent destabilization of the Sisk Dam embankment during a seismic event. The U.S. Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR) are the Lead Agencies for the proposed Project.

The Agencies prepared the Draft EIS/EIR to evaluate potential environmental impacts from the proposed Project and examines four different alternatives. The environmental document also analyzes safety concerns with the current dam and potential impacts to water supply deliveries to State and Federal contractors during construction of the proposed Project.

1

Metropolitan is pleased to submit comments on the Draft EIS/EIR to USBR and DWR for their consideration in preparing the Final EIS/EIR. In sum, Metropolitan provides these comments to ensure potential water supply and reliability impacts are adequately addressed.

Metropolitan is a public agency and regional water wholesaler. It is comprised of 26 member public agencies serving approximately 19 million people in portions of six counties in Southern California. Metropolitan's mission is to provide its 5,200 square miles service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Project Description: Alternative 3, Crest Raise Alternative

The Draft EIS/EIR states the Preferred Alternative is Alternative 3, the Crest Raise Alternative, as it is the only alternative identified with the ability to achieve all the project objectives while balancing adverse environmental effects. Metropolitan supports USBR and DWR's Preferred Alternative 3, as the only alternative that is able to maintain water supply deliveries to State

2

Water Project (SWP) contractors. Specifically, Metropolitan understands that the proposed Preferred Alternative, by allowing the reservoir to operate at its current maximum storage elevation, would:

- *Maintain Table A Deliveries*: Storage in San Luis Reservoir plays a key role in shoring up the amount of contract supply, known as Table A water, that is allocated to contractors by DWR in a given year. In the face of continued threats to Delta water supply reliability, it is imperative that the proposed Project maintain the water supply function of San Luis Reservoir.

- *Maintain Carryover Deliveries*: In addition to current year Table A supplies, San Luis Reservoir stores carryover supplies for contractors under contract provisions that allow for Table A water to be carried over into subsequent years. Carryover storage is an essential part of Metropolitan's water storage portfolio, helping to bolster supplies in drought years and to manage excess supplies in wet years. Over the last twenty years, Metropolitan has taken delivery of as much as 233,000 acre-feet of carryover in a single year, and 115,000 acre-feet per year on average. In recent years, carryover supply has been essential for meeting demands in Metropolitan's service area early in the year, when the SWP Table allocation A has been low and developing.

- *Maintain SWP Operational Flexibility:* Keeping existing maximum storage levels in San Luis Reservoir will allow for DWR and SWP contractors to continue using San Luis Reservoir as a tool for managing non-SWP pump-ins to the California Aqueduct. In the face of limited Table A supplies, groundwater or other supplies are pumped in to the aqueduct and stored or "backed up" into San Luis Reservoir to meet future demands.

- *Maintain Efficient Delivery Timing*: San Luis Reservoir is pivotal in storing water during the wettest months of the year when demands are lower for use during the spring and summer when demands peak. Although the availability of interruptible Article 21 supplies may increase in wet months with a lower operating pool in San Luis Reservoir, contractors may not have sufficient demands to take delivery of this water. In addition, this low demand period serves as a SWP maintenance window, and constrained system capacity could further limit the ability of contractors to take delivery of increased Article 21 supplies.

Because of the need to maintain the above water supply functions, Metropolitan does not support alternatives that would lower the maximum operating pool at San Luis Reservoir.

Water Supply Issues: Impacts During Construction

Metropolitan requests additional details on the nature of water supply impacts during construction, including more details on the construction schedule and opportunities to expedite and adjust the schedule to minimize water supply impacts. For example, it is stated in the draft EIS/EIR that the optional south valley section foundation shear key action would require limits on the maximum surface elevation in San Luis Reservoir for two seasons and would limit CVP

3

and SWP deliveries during this construction period. An expedited schedule and flexibility in the timing of this construction period based on existing hydrology and conditions could reduce water supply impacts. Additionally, the term "safe levels" is used in this document (pages ES-8, 2-13, and 2-15) and needs further definition in terms of water volume and storage elevation.

To minimize overall long-term water supply impacts, if the south valley shear key is needed, Metropolitan prefers that it is included in the Alternative 3 construction schedule, and not in a subsequent separate construction project.

Metropolitan requests that USBR and DWR coordinate with the water contractors to minimize potential operational and water supply impacts during construction.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation on this Project. For further assistance, please contact Ms. Brenda Marines at (213) 217-7902 or bmarines@mwdh2o.com.

Very truly yours,

for Jennifer Harriger
Interim Section Manager, Environmental Planning

BSM/rdl
(Sharepoint: Sisk Dam Safety of Dams Modification Project EIS/EIR)

cc: Eric Chapman
Deputy General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, CA 95814
echapman@swc.org

LA02

50 Environmental

May 24, 2019

Ms. Shelly Amrhein
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Re: B.F. Sisk Dam Safety of Dams Modification Project Draft Environmental Impact Statement/Environmental Impact Report

Dear Ms. LeFevre:

The Kern County Water Agency (Agency) would like to thank you for the opportunity to comment on the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the B.F. Sisk Dam Safety of Dams Modification Project (Project).

The Agency was created by the California State Legislature in 1961 to contract with the California Department of Water Resources for State Water Project (SWP) water. The Agency has contracts with water districts throughout Kern County to deliver SWP water. Therefore, the Agency is uniquely qualified to provide comments. 1

Comment 1: The Agency supports Alternative 3 – Crest Raise Alternative.

The Agency is supportive of efforts to prevent destabilization of the dam embankment, improve safety and maintain water supply deliveries to State and Federal contractors. The Crest Raise Alternative proposes to reduce the risks of overtopping from slumping and dam failure from cracking during a seismic event by raising the height of the dam crest 12 feet (pages 2-8 and 2-13). While the Project costs associated with this Alternative are high, maintaining the existing storage capacity of the San Luis Reservoir after construction is a significant benefit to the State Water Project Contractors (Contractors).

Comment 2: The Project would impact San Luis Reservoir storage capacity and reduce SWP deliveries 2

The Draft EIS/EIR indicates the Project has the potential to affect San Luis Reservoir storage capacity and limit deliveries to State and Federal contractors (page 2-13).

(661) 634-1400

Mailing Address
P.O. Box 58
Bakersfield, CA 93302-0058

Street Address
3200 Rio Mirada Drive
Bakersfield, CA 93308

The proposed scope of work will reduce San Luis Reservoir embankment strength during construction resulting in the need to reduce reservoir storage (page 2-13). Although construction actions impacting embankment strength would be "scheduled for completion during times in the water year that San Luis Reservoir is typically drawn down to lower levels," efforts should be made to work with the Contractors to minimize operational impacts to water deliveries.

If you have any questions, please contact Martin Varga of my staff at (661) 634-1400.

Sincerely,

Curtis Creel
General Manager

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B.F. Sisk Dam Safety of Dams Modification Project Environmental Impact Statement / Environmental Impact Report

Appendix B: Distribution List

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Appendix B
EIS/EIR Distribution List

This appendix includes the distribution list for the B.F. Sisk Dam Safety of Dams (SOD) Modification Project (Project) Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Only names and affiliations, if applicable, are shown on this list. This list has been in development since the Notice of Intent and scoping meeting in 2009.[1]

The Final EIS/EIR is available at https://www.usbr.gov/mp/sod/projects/sisk/.

Copies of the Final EIS/EIR are available for public review at the following locations:

- Bureau of Reclamation, Mid-Pacific Region, Regional Library, 2800 Cottage Way, Sacramento, CA 95825.
- California Department of Water Resources, 1416 Ninth Street, Room 604-8, Sacramento, CA 95814.
- Los Banos Library, 1312 Seventh Street, Los Banos CA 95635.
- Gilroy Public Library, 350 W. Sixth Street, Gilroy, CA 95020.

The distribution list includes the following:

- Representatives from other Federal, State, and local agencies that commented or expressed interest in the project.
- Representatives from non-governmental organizations that attended public meetings, provided comments, or expressed interest in the project.
- Interested members of the public that attended public meetings, provided comments, or expressed interest in the project.

[1] The U.S. Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) used scoping meetings and public hearing sign in sheets to help develop the distribution list. Some individuals that signed in did not provide email addresses or the handwriting was illegible. If a name or email address was missed, Reclamation and DWR have made the EIS/EIR available at identified locations and on Reclamation's website listed above.

B.1 Federal, Tribal, State, and Local Agencies

B.1.1 Federal Agencies

- National Marine Fisheries Service
- NOAA Fisheries
- United States House of Representatives
- United States Senate
- U.S. Army Corps of Engineers
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Land Management
- U.S. Bureau of Reclamation
- U.S. Department of the Interior, Office of the Solicitor
- U.S. Department of Justice
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

B.1.2 State Agencies and Organizations

- California Air Resources Board
- California Bay-Delta Authority
- California Department of Boating and Waterways
- California Department of Conservation
- California Department of Fish and Wildlife (Region 4)
- California Department of Forestry and Fire Protection
- California Department of Parks and Recreation
- California Department of Transportation (District #10)
- California Department of Water Resources
- California Environmental Protection Agency
- California Farm Bureau Federation
- California Highway Patrol
- California High Speed Rail Authority
- California Natural Resources Agency
- California Office of Historic Preservation
- California Regional Water Quality Control Board (Region 5)
- California State Assembly
- California State Lands Commission
- California State Senate
- California State Water Resources Control Board
- Central Valley Flood Protection Board
- Native American Heritage Commission
- State Water Contractors

B.1.3 Regional and Local Parties

- Alameda County
- Bay Area Air Quality Management District
- City of Gilroy
- City of Gustine
- City of Los Banos
- City of San Jose
- Contra Costa County
- East Bay Municipal Utility District
- Fresno County
- Kern County
- Kern County Water Agency
- Kings County
- Los Angeles County
- Orange County
- Pacific Gas & Electric
- San Benito County
- San Bernardino County
- San Diego County
- San Joaquin County
- San Joaquin Valley Air Pollution Control District
- San Luis Obispo County
- Santa Barbara County
- Santa Clara County
- Santa Clara Valley Water District
- Santa Nella County Water District
- San Luis Water District

- Madera County
- Merced County
- Merced County Farm Bureau
- Metropolitan Water District of Southern California
- Stanislaus County
- Tulare County
- Ventura County

B.2 Individuals

- John Ahn

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