



# SAN FRANCISCO PLANNING DEPARTMENT

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## Addendum to Environmental Impact Report

*Addendum Date:* December 13, 2012  
*Case No.:* **2005.0161E**  
*Project Title:* **Calaveras Dam Replacement Project**  
*EIR:* 2005.0161E, certified January 27, 2011  
*Project Sponsor:* San Francisco Public Utilities Commission  
*Lead Agency:* San Francisco Planning Department  
*Staff Contact:* Chris Kern – (415) 575-9037  
chris.kern@sfgov.org

1650 Mission St.  
Suite 400  
San Francisco,  
CA 94103-2479

Reception:  
**415.558.6378**

Fax:  
**415.558.6409**

Planning  
Information:  
**415.558.6377**

## REMARKS

### Background

The San Francisco Planning Commission certified a final environmental impact report (EIR) for the subject project, file number 2005.0161E, on January 27, 2011. The project analyzed in the EIR is the replacement of the Calaveras Dam to improve the seismic safety of the dam and to modify both existing facilities and future operations of the reservoir to enhance fish and wildlife habitat. The EIR also analyzed a project variant that included additional habitat enhancements for fish, refinements to various facility and construction components of the project, and related operational modifications. Following certification of the EIR, the San Francisco Public Utilities Commission (SFPUC) on January 27, 2011 and the San Francisco Board of Supervisors, on March 16, 2011, approved the project variant as the final adopted project.<sup>1</sup> The SFPUC has awarded contract(s) for the adopted project and construction began in August 2011.

Calaveras Dam and Reservoir are part of the regional water system owned and operated by the City and County of San Francisco, through the SFPUC. Calaveras Dam is located on Calaveras Creek in the Diablo Mountain Range in Alameda County, California, approximately 12 miles south of the City of Pleasanton and 7.5 miles east of the City of Fremont. Calaveras Dam forms Calaveras Reservoir, which is situated on the border between Alameda and Santa Clara Counties.

The SFPUC initiated studies in 1998 to evaluate the structural stability and performance of the dam during projected large earthquakes. The studies indicated that the dam does not meet current safety standards for large earthquakes. Beginning in the winter of 2001, the SFPUC lowered water levels in the reservoir in response to safety concerns about the seismic stability of the dam. A mandate from the California Department of Water Resources, Division of Safety of Dams (DSOD) directed the SFPUC to undertake necessary seismic improvements to the dam and lower the reservoir water level to a maximum of 705 feet<sup>2</sup> until these improvements are completed. The elevation of the lowered water level

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<sup>1</sup> The final approved project – described in the EIR as the Calaveras Dam Replacement Project (CDRP) Variant – is referenced in this addendum as the “adopted project.”

<sup>2</sup> All elevations of the reservoir for this report are identified in feet above the NGVD 1929 Datum.

corresponds to about 38,100 acre-feet (AF) of storage, which is approximately 60 percent less than the pre-DSOD restricted total water storage volume.<sup>3</sup>

With the DSOD-restricted maximum elevation of 705 feet (approximately 38,100 AF) and a previous California Department of Fish and Game (CDFG) established minimum lake level elevation of 690 feet (approximately 25,700 AF), usable storage<sup>4</sup> at present is limited to 12,400 AF (4 billion gallons), a reduction of more than 75 percent from the 96,850 AF pre-DSOD restricted storage capacity. At this reduced volume, Calaveras Reservoir's current usable storage capacity cannot meet the SFPUC's delivery reliability objective for the Sunol Region reservoirs of up to 60 consecutive days of supply. Overall system operational flexibility and reliability have also been reduced. Replacing Calaveras Dam would allow the reservoir storage to be restored to its pre-DSOD restricted capacity of 96,850 AF, and previous level of delivery reliability. Following approximately six years of engineering studies, the SFPUC determined that the best solution to address the seismic issue was construction of a new dam to replace the existing Calaveras Dam. Construction of the replacement dam is underway immediately downstream at the foot of the existing dam, and will respond to DSOD requirements to improve seismic safety. Following construction, SFPUC will be able to fill the reservoir to its former volume of about 96,850 AF. This will restore the previously existing yield and reliability of the SFPUC local system and provide water supply during droughts.

## PROPOSED PROJECT MODIFICATIONS

### Overview

The project modifications proposed by the SFPUC and addressed in this addendum are due to previously unknown landslide features in an area known as Observation Hill, which is located on the west side of the replacement dam and forms the left dam abutment. As described in the EIR for the adopted project, Observation Hill would be excavated into a series of benches to construct the spillway for the replacement dam and would have an overall slope of 1.3:1 (horizontal to vertical). Temblor sandstone removed from the left dam abutment excavation would be used to construct the downstream shell of the replacement dam and to buttress a landslide at the right dam abutment on the eastern side of the replacement dam.

The construction contractor's original plan was to excavate the left dam abutment slope above the spillway using a false or temporary cut slope in order to minimize materials handling. Material in front of the false cut was to be hauled to one of the permanent disposal sites identified in the EIR for the adopted project, and material between the false cut and permanent cut was to be removed at a later date directly to the replacement dam for use in dam construction.

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<sup>3</sup> Total storage is the total volume of water that is stored behind the dam. The pre-DSOD restriction total storage of Calaveras Reservoir was 96,850 acre-feet. Thus, the total storage of the reservoir has been reduced by almost 60 percent.

<sup>4</sup> Useable storage is the volume of water between the water surface and the deadpool or other lower limit such as the CDFG minimum lake level elevation. The pre-DSOD restriction useable storage of Calaveras Reservoir was 96,850 AF minus the volume that CDFG requires to be maintained (approximately 30,000 AF). Thus, the normal useable storage was approximately 68,850 AF. After the DSOD restriction, the useable storage was reduced to 12,400 AF, a reduction of approximately 75 percent.

The construction contractor began the false cut from the top of Observation Hill in March 2012. In June 2012, the construction contractor discovered a previously unknown landslide hazard in the temporary cut slopes, which posed a hazard during construction and threatened the stability of the left dam abutment and spillway as designed.

To address the newly discovered landslide hazard, the SFPUC proposed to layback (flatten) the left dam abutment in Observation Hill from the originally designed 1.3:1 slope to an overall slope of 2:1. As documented in Minor Project Modification (MPM) No. 18, on June 25, 2012, the Planning Department reviewed this proposed project modification and concurred with the SFPUC's determination that the proposal to layback the left dam abutment slope from 1.3:1 to 2:1 would not deviate from the adopted project such that it would result in any new significant impacts beyond those identified in the EIR or substantially increase the severity of a significant impact, and that no new mitigation measures would be required (see Appendix A).

The SFPUC next determined that the additional excavation of the left dam abutment to layback the slope from 1.3:1 to 2:1 would generate a total of approximately 2.4 million cubic yards of additional materials. The SFPUC's initial determination was that approximately 2 million cubic yards of this excess material could eventually be used for dam construction and that the remaining 400,000 cubic yards of material would require permanent disposal. Accordingly, the SFPUC requested Planning Department review of MPM Nos. 19 and 20 to address the temporary stockpiling and permanent disposal of the additional materials resulting from the left dam abutment excavation.

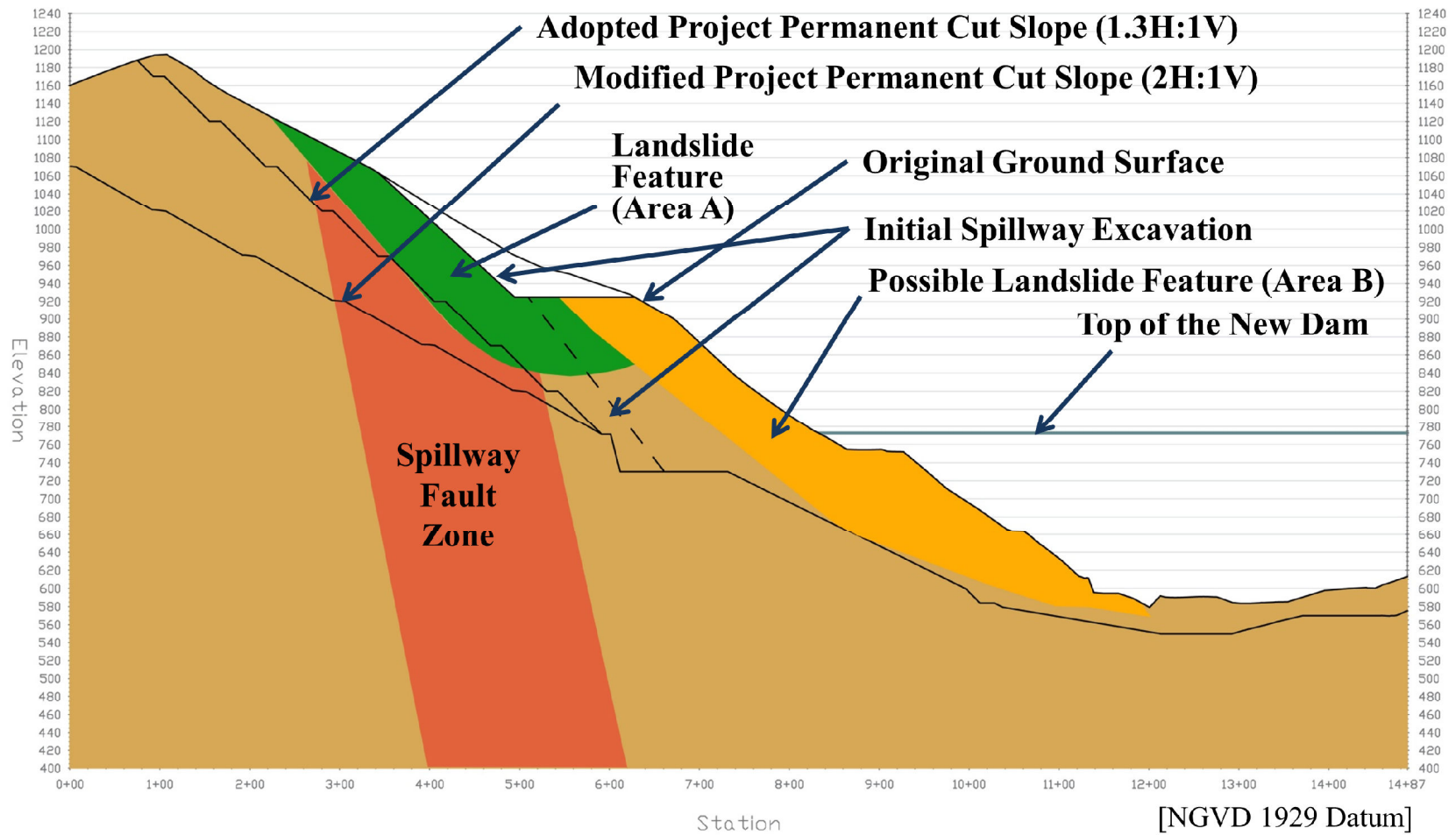
MPM No. 19 addressed the SFPUC's proposal to develop a new temporary disposal site (Disposal Site 10) to temporarily store approximately 2 million cubic yards of excess material removed from the left abutment excavation. This material would later be removed from Disposal Site 10 and used for dam construction. Under MPM No. 20, the SFPUC proposed to permanently dispose of an additional 400,000 cubic yards of excess material from the left dam abutment excavation within previously approved Disposal Site 2. On June 29, 2012 and July 16, 2012, the Planning Department concurred with the SFPUC's determinations that the temporary stockpiling of materials at Disposal Site 10 and the permanent disposal of additional materials at Disposal Site 2 as described in MPM Nos. 19 and 20 would not deviate from the adopted project such that it would result in any new significant impacts beyond those identified in the EIR or substantially increase the severity of a significant impact, and that no new mitigation measures would be required (see Appendix A).

In July 2012, the SFPUC initiated a geological and geotechnical study<sup>5</sup> to further evaluate the slope instability hazard affecting the left dam abutment excavation. The study found the presence of one landslide feature (Area A) and another possible landslide feature (Area B) in the spillway cut slope in Observation Hill (see **Figure 1**). The study also found that the Spillway Fault Zone, a zone of sheared and broken rock along the trace of the Spillway Fault, was much wider than originally considered during design. Due to the presence of the Area A landslide feature and the wider Spillway Fault Zone, the study recommended additional excavation of the left abutment and grading of Observation Hill from its original design slope of 1.3:1 to a less steep 2:1 slope as described under MPM No. 18 (see **Figure 1**).

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<sup>5</sup> Evaluation of Left Abutment Excavation Slope Calaveras Dam Replacement Project, URS Corporation, September 17, 2012.

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**Figure 1**  
Cross-Section of the Left Abutment

The geological and geotechnical study of the left dam abutment excavation also resulted in refinements to the additional temporary and permanent disposal requirements previously described in MPM Nos. 19 and 20. The study determined that the additional excavation required to grade the left abutment to a 2:1 slope would result in approximately 1.4 million cubic yards of material that would need to be temporarily stockpiled prior to use for construction of the replacement dam and 1.6 million cubic yards of excess material requiring permanent disposal (spoils) for a total of approximately 3 million cubic yards.

### Minor Project Modifications

During the course of project construction, the SFPUC has proposed various minor project modifications and refinements necessitated by unanticipated site conditions. The San Francisco Planning Department, in its capacity as the CEQA lead agency, reviewed each of these project modifications, concurred that they were minor and determined that the modified project would not deviate from the adopted project such that it would result in any new significant impacts beyond those identified in the EIR or substantially increase the severity of a significant impact, and that no new mitigation measures would be required. **Table 1** below summarizes the MPMs that the Planning Department has reviewed for the project. The full text of each of the MPMs listed in Table 1 is included in Appendix A of this addendum. As noted below, the SFPUC obtained required approvals for these minor project modifications from state and federal regulatory agencies, including the California Department of Fish and Game (CDFG), Regional Water Quality Control Board (RWQCB), U.S. Fish and Wildlife Service (USWFS), and U.S. Army Corps of Engineers (USACE).

**Table 1: Minor Project Modifications**

MPM Number	Approval Date	Description
1	05/17/11	In accordance with air quality mitigation provided in EIR, install 12 air monitoring stations in the project vicinity
2	06/02/11	Relocate two air quality monitoring stations addressed previously in MPM 1
3 *	07/11/11	Delay implementation of California Tiger Salamander mitigation to the 2011-2012 rainy season
4 *	10/19/2011	Expand the limits of construction for Disposal Site 3 temporary bypass pipe and rock dike
5	10/26/2011	Extend construction hours to 24 hours during 3 month site preparation at Disposal Site 3
6	N/A	Note: MPM was initiated but due to design changes, was not implemented
7 *	12/7/2011	Increase the construction limits to provide additional work area at the right abutment and to provide improvements to the existing boat ramp access road
8	12/6/2011	Install two survey monuments outside the construction limits
9	2/21/2012	Place construction staff trailer in existing parking area and excavate an approximately 960-foot long trench (12 inches deep by 8 inches wide) to provide power from an existing power pole

MPM Number	Approval Date	Description
10 *	2/8/2012	Widen road to maintain two-way traffic while providing additional area for a wheel-wash area, required for health and safety (asbestos dust mitigation)
11 *	2/8/2012	Expand the haul route to Disposal Site 7 for approximately 1 mile resulting in additional habitat impacts subject to compensatory mitigation provided in the EIR
12 *	2/8/2012	Expand the construction work area at Borrow Area B resulting in additional habitat impacts subject to compensatory mitigation provided in the EIR
13	3/28/2012	Use two Tier 2 diesel engine Dozers (D11) that do not have the California Air Resources Board (CARB) Level 3 Diesel Emission Control Strategies
14 *	4/4/2012	Modify Staging Area 6 to provide access to construction personal vehicles without having to traverse areas within the project that may contain naturally occurring asbestos
15 *	5/15/2012	Modify construction method to replace use of a barge with land based approach at ADIT#2 and use of a platform extending from the shoreline at ADIT#1 due to low water levels
16 *	5/22/2012	Expand Disposal Site 3 to correct a grading/ponding issue and reduce construction footprint by equivalent amount at Staging Area 3 resulting in no net change in habitat impact
17	6/17/2012	Realign a portion of the west haul route to address a perceived safety issue
18 *	6/25/2012	Modify the slope of the left dam abutment excavation to 2:1 (included in description of proposed project modifications addressed in this addendum)
19 *	7/11/2012	Develop new Disposal Site 10 with a capacity of approximately 2 million cubic yards for the additional excavation required at the left bank of the new dam (included in description of proposed project modifications addressed in this addendum)
20 *	7/16/2012	Increase capacity of Disposal Site 2 located behind the new dam and below the inundation level from 900,000 to 1.3 million cubic yards (included in description of project modifications addressed in this addendum)
21	7/30/2012	Install 2 temporary geologic slope monitoring stations located outside of the approved work area, each occupying about 16 square feet of surface area and extending about 30 inches above grade and 3 feet below grade
22	11/5/2012	Improve existing boat ramp
23 *	11/5/2012	Restore berm at existing cattle pond that serves as relocation area for California tiger salamander as requested by CDFG with USFWS concurrence

\*Planning Department approval was subject to concurrent approval from the applicable state and federal agencies,

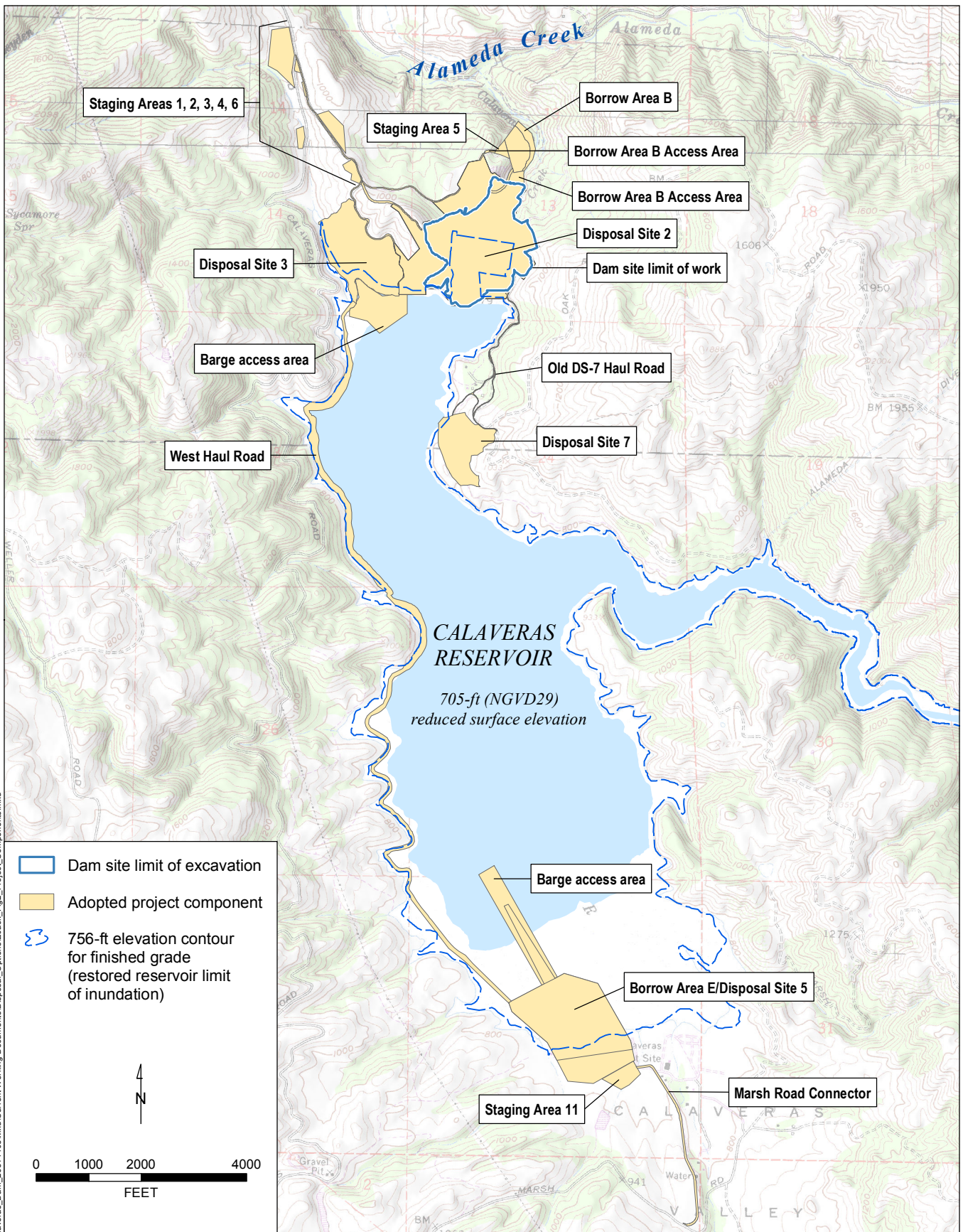
including DSOD, CDFG, RWQCB, USFWS, and/or USACE

The disposal sites described in the EIR (Disposal Site 2, Disposal Site 3, and Disposal Site 7, with a combined capacity of approximately 4.44 million cubic yards), do not have sufficient excess capacity for the additional spoils that would be generated by the proposed excavation and grading of the left dam abutment (see **Figure 2**). Reserve Disposal Site 5 is located at the south end of the reservoir as shown in **Figure 2**, but would not be available until after clay materials have been excavated from Borrow Area E/Disposal Site 5 for the dam core, which is after spillway excavation is essentially complete. Because of this timing/sequencing constraint and the distance from the dam construction site, Reserve Disposal Site 5 is not considered a suitable option for the additional spoils. Consequently, SFPUC has identified five new disposal sites for the increased spoils—Disposal Sites A/D, F, G, H, and I (see **Figure 3**) could provide the required additional capacity along with a small contingency. The capacity and acreage of each site is listed in **Table 2**. As shown on Table 2, the total acreage associated with the new disposal sites is approximately 86.5 acres, including about 29.1 acres outside of the adopted project work limits.

In addition to the five new disposal sites, the SFPUC proposes to expand the capacity of Disposal Site 2 from 900,000 cubic yards as described in the EIR for the adopted project to 1.3 million cubic yards. Disposal Site 2 is located in the area between the existing dam (which would serve as a cofferdam during construction) and the replacement dam. As shown on Figure 3, all of the additional spoils proposed to be placed at this site would be located within the 13.9-acre portion of the site that would be below the 756-foot future inundation level of the restored reservoir. As the full scope of the project modifications required to address the landslide hazards was developed, the work proposed under MPM Nos. 18, 19, and 20 was further refined and incorporated into the project modifications addressed in this addendum and further described below.

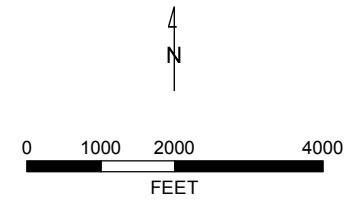
**Table 2: Proposed Disposal Site Capacity Summary**

Disposal Site	Total Site Acreage	Acreage Inside (Outside) Original Project Footprint	Estimated Capacity (cy)
A/D	26.0	10.1 (15.9)	1,175,000
F	11.8	3.0 (8.8)	450,000
G	12.9	12.4 (0.5)	400,000
H	13.1	13.1 (0.0)	200,000
I	22.7	18.8 (3.9)	1,010,000
2	16.6	16.6 (0)	1,300,000
<b>Totals</b>	<b>103.1</b>	<b>74.0 (29.1)</b>	<b>4,735,000</b>



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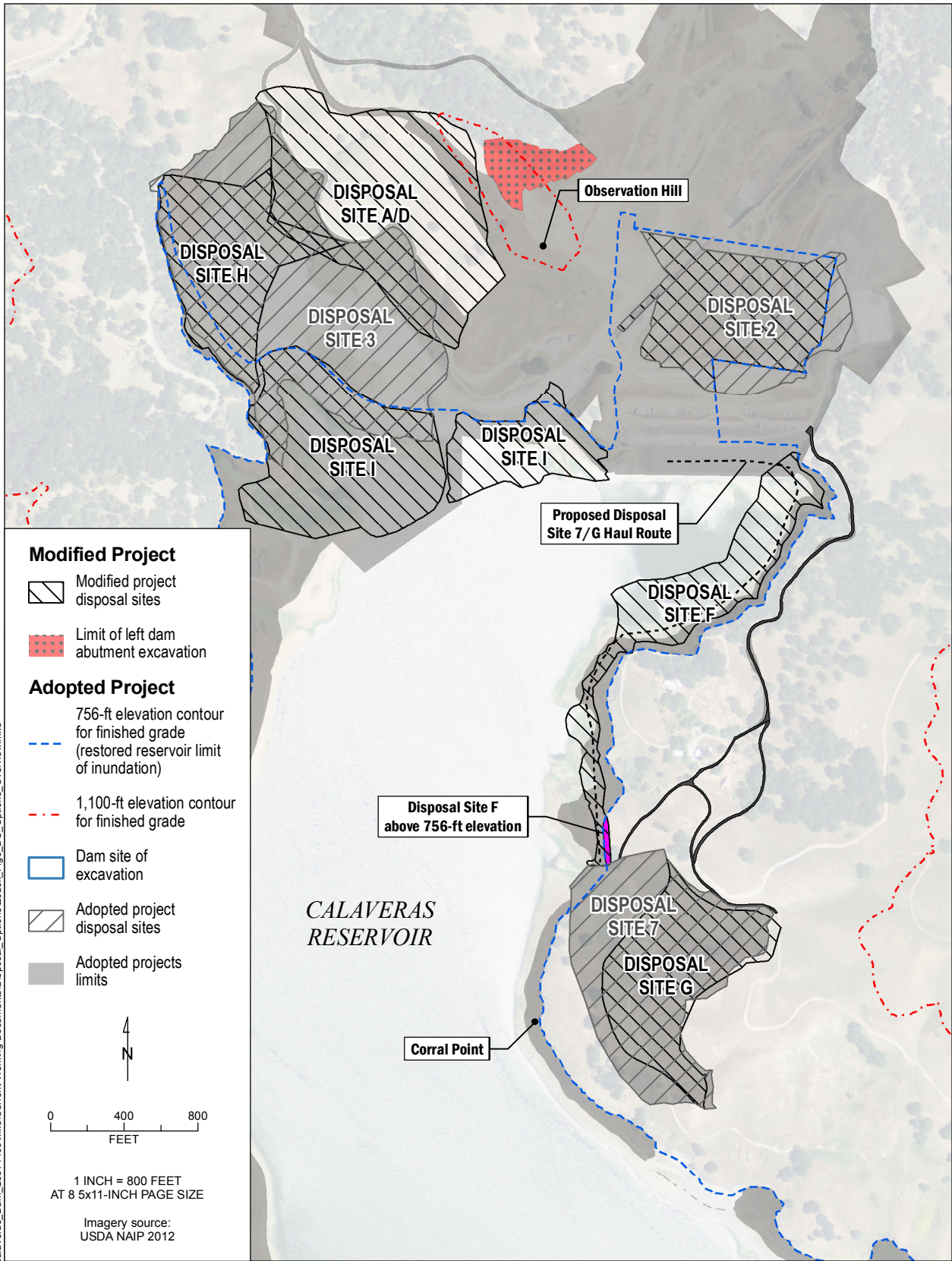
- Dam site limit of excavation
- Adopted project component
- 756-ft elevation contour for finished grade (restored reservoir limit of inundation)



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**Figure 2**  
Adopted Project Components





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**Figure 3**  
Modified Project Components

In terms of sequence of use, proposed Disposal Sites A/D would most likely be used first. Concurrently, turbidity barriers would be placed in the reservoir so that Disposal Sites F and I, which are located partially within the reservoir, could begin to be filled. Once filled, Disposal Site F would provide a temporary haul route to both the approved Disposal Site 7 and proposed Disposal Site G, and would avoid the need to construct a separate upland haul road to Disposal Site 7 as described in the EIR for the adopted project. Thus, Disposal Site F would need to be complete before materials for disposal could be hauled to Disposal Sites 7 and G. Disposal Sites H and 2 would likely be used last.

The additional excavation required at the left abutment and the proposed disposal sites are described in further detail in the sections below. Where applicable, changes from the EIR for the adopted project resulting from the proposed project modifications are shown in ~~strike through~~ and underline format.

### **Left Dam Abutment Excavation**

Under the proposed project modifications, the SFPUC would grade the slope of Observation Hill for the spillway to an overall final slope of 2:1. The excavation of the left dam abutment slope would expand the excavation work area at the top of the slope by approximately 4.1 acres compared to the adopted project, and would be constructed between an elevation of approximately 756 feet and 1,100 feet (see **Figure 3**). The finished grade of the left dam abutment would generally consist of 12.5-foot-wide benches at 50-foot vertical intervals with slopes of 1.5:1 between benches. One of the benches, at elevation 820 feet, would have a width of 25 feet to facilitate installation of a line of 3-foot-diameter stabilization shafts up to 70 feet deep. Where needed, rock netting, rock bolts, and/or shotcrete would be placed for stabilization of the surface of the slope. The additional material to be removed and permanently disposed of by altering the 1.3:1 slope under the adopted project to a 2:1 slope proposed under the modified project would be 1.3 million cubic yards. In addition to excavating and re-grading the left dam abutment slope, an additional 410,000 cubic yards of material related to the unexpected geological features in the dam foundation is expected to require removal. This would result in a total of 1.71 million cubic yards of additional excavation and permanent disposal compared to the adopted project. The left dam abutment work also would require excavation and temporary stockpiling of an additional 1.4 million cubic yards of material compared to the adopted project. This material would be stockpiled temporarily at Disposal Site A/D until it is needed for construction of the dam foundation.

The materials would be excavated using a combination of ripping with bulldozers and controlled detonation (blasting) methods. The excavated materials would be hauled to the disposal sites using a combination of scrapers and off-highway rigid body dump trucks. The new excavation and resultant spoils would consist primarily of Temblor Sandstone, which does not contain naturally occurring asbestos (NOA) or high levels of metals. A very small amount of the proposed excavation would occur on the south side of the left abutment slope, which contains NOA-bearing serpentinite. As a result, approximately 60 cubic yards of NOA-bearing material would be disposed in either Disposal Site 3 or A/D.<sup>6</sup> Consistent with the adopted project the additional 60 cubic yards of NOA-containing material would be placed at or above 760 feet (4 feet above the proposed normal maximum reservoir surface

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<sup>6</sup> Proposed Disposal Site A/D overlaps with approved Disposal Site 3. Most of the NOA-containing material will be placed within the area shared by these two disposal sites.

elevation of 756 feet) to prevent NOA from coming into contact with the reservoir surface water. NOA containing material would be capped with four feet of Temblor Sandstone.

### Disposal Site A/D

Proposed Disposal Site A/D<sup>7</sup> would be located to the west of the existing dam and extends above and northeast of approved Disposal Site 3. The site could accommodate approximately 1.18 million cubic yards of spoils in an area of approximately 26.0 acres, 10.1 acres of which is within the footprint of the adopted project. An estimated 950,000 cubic yards of the 1.18 million cubic yards of material in Disposal Site A/D would be Temblor Sandstone fill that would be temporarily stockpiled until used for dam construction.

Disposal Site A/D would be placed on the top of Disposal Site 3 sloping upward to the northeast from about elevation 880 feet. The maximum elevation when filled to capacity would be 1,150 feet, including both permanent fill and the temporary stockpiling of material that would later be used for dam construction. Once the stockpiled material is removed for dam construction, the permanent top elevation of Disposal Site A/D would be less than 1,150 feet. The fill would have a maximum slope of 3:1. A 2,100-foot-long portion of the existing dam access road would be covered by the disposal site, and as such would be relocated to the outside edge of the disposal site. A 560-foot-long portion of an unimproved road to the top of Observation Hill would also be covered by the disposal site. This road would be temporarily relocated over the disposal site until the stockpile of Temblor Sandstone is used for construction of the dam, after which the 560-foot-long portion of the unimproved road would be restored.

To prepare Disposal Site A/D, topsoil would be stripped from the site and stored while spoils are deposited. Materials excavated from the dam site for disposal or temporary stockpiling would be transported to Disposal Site A/D using off-highway rigid frame dump trucks or scrapers. The haul distance to this disposal site would be approximately 0.3 to 0.5 mile. Spoils would generally be deposited and spread in approximately two-foot lifts, then compacted by a bulldozer. The excavated materials from the left abutment that would be placed in the disposal site are primarily Temblor Sandstone, and a very small volume (60 cubic yards) of potentially NOA-bearing serpentinite. In addition to the 60 cubic yards of potentially NOA-containing material from the south side of the left abutment excavation, approximately 370,000 cubic yards of potentially NOA-containing material from the dam foundation excavation described under the adopted project will be disposed at either Disposal Site 3 or A/D as a result of re-sequencing work activities due to the proposed project modifications.<sup>8</sup> Excavated materials that potentially contain NOA would be capped with a minimum of 4 feet of clean material (i.e. non-NOA), one foot of which is topsoil.

After the temporary stockpile of Temblor Sandstone is removed for dam construction, erosion protection measures, including benching and surface water ditches, would be provided for the remaining fill in this

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<sup>7</sup> A portion of proposed Disposal Site A/D, formerly known as Disposal Site 10, was approved for temporary stockpiling of spoils material resulting from the additional left abutment slope excavation under Minor Project Modification 19 (see Table 1).

<sup>8</sup> Proposed Disposal Site A/D overlaps with approved Disposal Site 3. Most of the NOA-containing material will be placed within the area shared by these two disposal sites. The EIR identifies Disposal Sites 2, 3 and 7 for disposal of NOA-containing materials under the adopted project.

disposal site to prevent erosion and promote restoration of the slopes. The stored topsoil would be returned and hydro-seeded with native grasses, and vegetated drainage swales would be constructed to transport surface water to the reservoir. Water from seeps below the footprint of the disposal site would be collected by sand and gravel finger drains, which would connect to the finger drains under Disposal Site 3 so that seepage flows are conveyed to the reservoir.

### **Disposal Site F**

Proposed Disposal Site F would be located along the eastern shore of Calaveras Reservoir between the existing dam and extending southward to Disposal Site 7, on an area of approximately 11.8 acres (3 acres are within the work limits of the adopted project). The site could accommodate approximately 450,000 cubic yards of spoils. All but 0.1 acre would be located below the normal (future) maximum water surface elevation of 756 feet when the reservoir is refilled. Disposal Site F would be used for construction of a temporary haul road to Disposal Sites 7 and G, in lieu of constructing a separate haul route along the eastern shore at a higher elevation as planned under the adopted project. Construction of Disposal Site F would thus need to be completed prior to hauling materials to Disposal Site 7 and Disposal Site G.

This disposal site would slope upward to the east and southeast from elevation 620 feet to 705 feet at a 2:1 slope and then graded to a 3:1 slope rising from elevation 705 feet to 730 feet. With the exception of the two ramps at the northern and southern edges of Disposal Site F, all spoils will be placed at this site would be below elevation 730 feet. The two ramps would extend to 760 feet where they join to the downstream face of the dam and the dike at Disposal Site 7. A 50-foot-wide bench would be graded along the top of Disposal Site F to provide a haul route to transport spoils to Disposal Sites 7 and G by truck, or by a conveyor belt (see description below under Disposal Site G). The final grade of the site would include swales in the bench to convey surface water flows from small drainages east of the bench into the reservoir. Riprap would be placed between elevation 688 feet (5 feet below typical minimum operating pool elevation 693 feet) and 756 feet. Materials potentially containing NOA would not be placed in Disposal Site F.

Construction at Disposal Site F would begin with the placement of a temporary turbidity barrier in the reservoir to minimize turbidity impacts on the reservoir during construction and placement of spoils. The turbidity barrier would be placed adjacent to Disposal Site F approximately 150 feet offshore and would consist of a vinyl polyester fabric curtain suspended from a floatation boom and anchored with a bottom ballast section and anchoring and securing mechanisms. The fabric curtain segment hangs down vertically in the water under the floatation section with an encapsulated bottom ballast section which is present along the entire length of the barrier. Panel sections are attached along vertical edges to form a continuous curtain. A trench 50-foot-wide and up to 10 feet deep would be excavated underwater through the soft sediment at the toe of the disposal site to provide a stable base for the rockfill to be placed underwater. Harder more durable portions of the Temblor Sandstone would be placed as rockfill in the water up to elevation 688 feet, which is below the CDFG minimum pool elevation of 690 feet. Rockfill would form an approximately 2:1 slope below the waterline. Above elevation 688 feet, the disposal site would be filled with excavated Temblor Sandstone materials spread in approximately two-foot lifts and compacted by a bulldozer. Turbidity inside and outside of the turbidity barrier would be monitored as part of the construction Storm Water Pollution Prevention Plan (SWPPP), and additional erosion and sediment controls would be implemented as necessary. Materials excavated from the dam site would be transported to Disposal Site F for disposal using off-highway trucks. The haul distance to this disposal site would be up to 1 mile.

### Disposal Site G

Proposed Disposal Site G overlies approved Disposal Site 7, which is located on a terrace on the east side of the reservoir at Corral Point. Additional capacity would be provided at Disposal Site G by extending the fill about 70 feet above the limits of Disposal Site 7. The site could accommodate approximately 400,000 cubic yards of material on an area of approximately 12.9 acres, all but 0.5 acres of which is within the work limits of the adopted project. Disposal Site G was designed to avoid disturbance of the rare plant most beautiful jewel-flower (*Streptanthus albidus* spp. *permamoenus*) located near Disposal Site 7.

This disposal site would slope upward to the east from elevation 870 feet to a maximum elevation of 940 feet at a maximum slope of 3:1; this would increase the elevation of the finished grade by approximately 70 feet compared to the adopted project. To prepare Disposal Site G, 0.5 acres of topsoil would be stripped from the site and stored while spoils are deposited. Materials excavated from the dam site would be transported to both Disposal Site 7 and Disposal Site G via the proposed haul route across Disposal Site F by truck or conveyor belt (described below). The haul distance to this disposal site would be approximately 1 mile. Spoils would generally be deposited and spread in approximately 2-foot lifts, then compacted by a bulldozer. Erosion protection measures, including benching and surface water ditches, would be provided for this disposal site to prevent erosion and promote restoration of the slopes. At the end of construction, Disposal Site G would be re-contoured. The topsoil would be restored and hydro-seeded with a native grasses, and vegetated drainage swales would be constructed to transport surface water to the reservoir.

An alternative method for transporting spoils from the dam construction site to Disposal Sites 7 and G would be a conveyor system. The conveyor system would be constructed over Disposal Site F and would have a length of about 1 mile between the existing dam and Disposal Site 7. The equipment that would be used in construction of the conveyor belt would include dozers, dump trucks, excavators, and a compactor. The conveyor belt would require 440-volts of power that would be supplied through a new overhead power line installed from existing switch gear near the Bluestone Building, and extending over the top of the dam, via Disposal Site F and into Disposal Site 7. There would also be a branch circuit from the switchgear to the screen and crusher located at the top of the existing spillway to power the processing of excavated materials prior to conveyor transport to Disposal Sites 7 and G.

### Disposal Site H

Proposed Disposal Site H overlies the western portion of approved Disposal Site 3, which is located to the west of the existing dam above the northwestern corner of the reservoir alongside Calaveras Road. The footprint of the disposal area has been configured to avoid the perennial creek that flows in the valley bottom. The site could accommodate approximately 200,000 cubic yards of spoils within an approximately 13.1-acre area, all of which is fully within the work limits of the adopted project.

This disposal site would slope upward onto Disposal Site 3 from elevation 740 feet to a maximum elevation of 950 feet with a maximum slope of 3:1. Disposal Site H would partly fill a small south-draining valley located west of the existing dam. Disposal Site H would widen the Disposal Site 3 fill in the valley bottom by up to 50 feet and extends from the level of the relocated drainage at the base of Disposal Site 3 up to the top of Disposal Site 3 at Elevation 950 feet. However, the peak elevation of Disposal Site 3 would not change as a result of the modified project. Similar to Disposal Site 3, compacted Temblor Sandstone fill (non-NOA containing materials) would be placed at elevations lower than 760 feet. To prepare Disposal Site H, topsoil would be stripped from the site and stored while spoils are

deposited. Materials excavated from the dam site would be transported to Disposal Site H for disposal using off-highway trucks traveling across Disposal Site 3. The haul distance to this disposal site would be approximately 0.9 mile.

Sand and gravel finger drains constructed within the footprint of Disposal Site 3 to convey water from springs and seeps would be extended through Disposal Site H. Erosion protection measures, including benching and surface water ditches, would be provided to prevent erosion and promote restoration of the slopes. The final grade of the site would be configured to facilitate re-vegetation and would include a re-contoured drainage channel at the west side of Disposal Site H; the fill would approximate the contours of the adjacent hilly topography. Topsoil would be restored and hydro-seeded with a native grasses.

After the reservoir is refilled to elevation 756, reservoir water in the drainage channel would form an inlet west of both Disposal Site H and Disposal Site 3. Placement of 1,200 cubic yards of material within the future inundation zone of the reservoir at Disposal Site H under the modified project would slightly reduce the area of the restored reservoir water surface from 444 acres to 443.3 acres. The shoreline within the inlet at Disposal Site 3 would be restored and managed to encourage the re-establishment of riparian vegetation and transitional vegetation between riparian and upland areas.

#### **Disposal Site I**

Disposal Site I is comprised of two separate disposal units and would be located south of the eastern edge of Disposal Site 3 within the reservoir. The site would cover the dike at the base of Disposal Site 3 and extend southeast into the reservoir. The site would accommodate approximately 1.01 million cubic yards of spoils within an approximately 22.7-acre area, all of which would be located below the normal (future) maximum water surface elevation of 756 feet when the reservoir is refilled. The haul distance to this disposal site would be approximately 0.6 mile.

The disposal site would slope upward to the northwest from elevation 640 feet to 705 feet at a 2:1 slope to an inclined bench that continues to slope upward to elevation 730 feet at between 5:1 and 10:1. At elevation 730 feet the disposal site rises at a 3:1 slope forming a broad flat area at elevation 756 feet extending to the north and to the west until it butts up against Disposal Site 3. The final grade of the site would be configured to include a 30-foot-wide and up to 35-foot-deep riprap-lined outlet channel through the central portion of the site to provide drainage into the reservoir. Riprap would be placed for erosion protection between elevation 688 feet (5 feet below minimum operating pool elevation 693 feet) and 756 feet. The flat area at elevation 756 feet would be restored to encourage establishment of riparian vegetation. Materials potentially containing NOA would not be placed in Disposal Site I.

Similar to Disposal Site F, prior to placing spoils in the water, a turbidity barrier would be placed in the reservoir as described above. Construction would also be similar to that described for Disposal Site F, except that the trench excavated underwater at the toe of the disposal site to provide a stable base for the rockfill would be 100-foot-wide and up to 20 feet deep. Riprap materials that have been placed on Disposal Site 3 would be removed and salvaged prior to placing additional spoils over materials deposited at Disposal Site 3. The salvaged riprap materials would be used for Disposal Site I.

As further discussed under Cultural Resources below, a previously recorded archaeological site is located partially within Disposal Site I. The proposed placement of spoils at Disposal Site I is not anticipated to disturb this archaeological site. However, to ensure that the modified project would not affect this cultural resource, prior to placing spoils the area would be covered with geotextile fabric followed by a two-inch thick layer of washed gravel or sand that is visually distinct from the spoils.

**Disposal Site 2**

Disposal Site 2 is identified in the EIR for the adopted project. This disposal site would take advantage of the space between the existing dam (which would serve as a cofferdam during construction) and the replacement dam. This site would become available as the replacement dam is constructed. An approach channel leading to the new spillway would be excavated through the west side of the cofferdam, and the excavated material from the cofferdam would be placed in Disposal Site 2. Rockfill from the existing dam would be placed on the surface of the disposal site for erosion protection. The capacity of this disposal site as described in the EIR is 900,000 cubic yards within an area of approximately 16.6 acres. Under the modified project, the SFPUC would dispose of up to 400,000 cubic yards of additional spoils at this site. These additional spoils would come from excess material from the spillway excavation, including material coming from excavation of the approach channel through the west side of the cofferdam. All additional material proposed for this site would be placed within the 13.9-acre portion of this site that would be below the future inundation level of the reservoir and would raise the reservoir bottom from an elevation of 650 feet to 720 feet in this area.

**Comparison of the Adopted Project and Modified Project**

Table 3 below provides a summary of the proposed project modifications in comparison to the adopted project.

**Table 3: Comparison of the Adopted Project and Modified Project**

Adopted project	Modified Project
<b>Facilities</b>	
Replacement dam: design criteria, design and composition of the replacement dam (Final EIR, pages 3-24 to 3-28)	Same, no changes
Spillway: Excavation of a portion of Observation Hill for new spillway with an overall slope of 1.3:1 resulting in 1.87 million cubic yards of non-NOA containing excavated materials for disposal (Final EIR, pages 3-28 to 3-30 and 3-37)	Spillway excavation in portion of Observation Hill graded from overall slope of 1.3:1 to 2:1 resulting in an additional 1.3 million cubic yards of non-NOA containing excavated materials for disposal
Intake shafts and adits (Final EIR, pages 3-30 to 3-31)	Same, no changes
Outlet pipe, stream discharge valves, supporting facilities (Final EIR, pages 3-31)	Same, no changes
Instrumentation (Final EIR, pages 3-31 to 3-32)	Same, no changes
Alameda Creek Diversion Dam (ACDD) bypass facility (Final EIR, pages 3-32)	Same, no changes
<b>Construction</b>	
Use of the existing dam as the cofferdam (Final EIR, page 3-33)	Same, no changes

Adopted project	Modified Project
Excavation and construction of the dam foundation and embankment resulting in 2.325 million cubic yards of material for disposal (Final EIR, pages 3-35 to 3-37)	Additional excavation of left dam abutment and foundation to remove newly discovered landslide hazards resulting in an additional 1.71 million cubic yards of material for disposal
Source of materials for construction (Final EIR, pages 3-37 to 3-42)	Same, no changes
Construction staging areas (Final EIR, page 3-43)	Same, no changes
Four disposal sites with a combined total capacity of 5.28 million cubic yards (Final EIR, pages 3-43 to 3-49)	Five disposal sites added with combined total capacity of 3.235 million cubic yards to accommodate excess excavated materials resulting from additional excavation in Observation Hill and expansion of Disposal Site 2 from 900,000 cubic yards to 1.3 million cubic yards
Haul route located on the northeast side of the reservoir between the dam and Disposal Site 7 (Final EIR, page 3-54)	New haul route to Disposal Site 7 through Disposal Site F to access Disposal Sites 7 and G, would replace the Disposal Site 7 haul road
Demolition and construction of support buildings (Final EIR, page 3-55)	Same, no changes
Blasting (Final EIR, pages 3-55 to 3-56)	Same, no changes
Construction of ACDD bypass facility (Final EIR, pages 3-56 to 3-59)	Same, no changes
SFPUC standard construction measures and greenhouse gas reduction actions (Final EIR, pages 3-59 to 3-60)	Same, no changes
Two shutdowns of the dam outlet works during construction (approximately mid-April to mid-November in either 2011 and 2012 or 2012 and 2013) to allow excavation of the dam foundation and extension of the outlet conduit, and to connect the new intake shaft to the outlet conduit (Final EIR page 3-62)	One additional shutdown of the dam outlet works in mid-April to mid-November 2015
<b>Operations</b>	
Calaveras Reservoir operations (Final EIR, pages 3-64 to 3-65)	Same, no changes.
Cone valve operations (Final EIR, pages 3-65 to 3-66)	Same, no changes
ACDD Operations (Final EIR, page 3-66)	Same, no changes



Adopted project	Modified Project
Resident rainbow trout flow releases (Final EIR, pages 3-66 to 3-69)	Same, no changes
Steelhead flow releases (Final EIR, pages 3-69 to 3-70), including footnotes to Table 3.7 (page 3-70)	Same, no changes

### Construction Schedule

The additional excavation and handling of materials would increase the duration of construction by approximately 3 years. In addition, the number of temporary shutdowns of the dam outlet works would increase from two 6-month periods to three 6-month periods. However, the work activities described in the construction schedule and number of construction workers at the site would generally remain the same as under the adopted project.

Section 3.5.5 of the EIR provides a detailed schedule for construction of the adopted project. As stated above, the proposed project modifications would extend the duration of construction by approximately three years, and would affect the sequencing of some of the construction activities. The resulting changes to the detailed project construction schedule contained in the EIR are shown below in ~~strikethrough~~ and underline format.

The estimated duration of construction would be approximately ~~4~~ 7 years. In the first construction season, which ~~would be began in August 2011 assuming Notice to Proceed is issued to the contractor in spring of that year,~~ work ~~would~~ primarily included:

- Mobilization (e.g., site preparation, establishing staging areas);
- Demolition of existing site facilities (exclusive of the dam);
- Preparing the haul roads and access roads;
- Stabilizing the right abutment landslide;
- Begin C~~on~~structing the dikes for Disposal Sites 3 ~~and~~ 7;
- ~~Excavating the stilling basin, and placement of the excavated materials in disposal sites;~~
- ~~Importing 20,800 cubic yards of filter and drain materials for Disposal Sites 3 and 7 finger drains;~~
- ~~Starting excavation of the dam foundation;~~
- ~~Excavating the intake shaft and adits; and~~
- Installing temporary water and power supplies for construction; and
- Implementing temporary wintertime stabilization measures each year.

In the second construction season, assumed to be 2012, work ~~would~~ primarily included:

- Excavating the ~~lower~~ left abutment ~~trench~~;
- Stabilizing the right dam abutment landslide;

- Excavating the right dam abutment;
- Excavating the dam foundations;
- Grouting the right abutment foundation;
- Excavating the intake shaft and adits;
- Excavating Borrow Area B;
- Complete constructing the dikes for Disposal Sites 3 and 7;
- ~~Constructing the intake shaft and tower;~~
- Constructing the stilling basin;
- ~~Constructing the crest electrical building;~~
- Interconnecting the old and new intake shafts and connecting to outlet conduit;
- ~~Start importing 298,300 cubic yards of filter and drain materials for dam construction; and~~
- Importing 20,800 cubic yards of filter and drain material for Disposal Sites 3, 7, and A/D; and
- Constructing the west shore haul route.

In the third construction season, assumed to be 2013, work would primarily include:

- Preparing Disposal Sites F and I for use;
- Preparing left abutment layback area;
- Installing turbidity curtains for Disposal Sites F and I;
- Excavating spillway cut;
- Hauling temporary spoils into Disposal Site A/D;
- Constructing the dam crest electrical building;
- ~~Importing filter and drain materials for dam construction;~~
- ~~Excavating the upper left abutment trench;~~
- Preparing the core and shell foundations and grouting; and
- Installing upstream intake pipe.
- ~~Beginning excavation of the spillway foundation;~~
- ~~Starting construction of the spillway chute; and~~
- ~~Constructing the replacement dam up to Elevation 655 feet.~~

In the fourth construction season, assumed to be 2014, work would primarily include:

- ~~Complete importing filter and drain materials;~~
- ~~Constructing the spillway;~~

- ~~Completing construction of the embankment;~~
- ~~Excavating the channel in the existing dam;~~
- ~~Installing the instrumentation;~~
- ~~Installing plantings and restoring construction areas;~~
- ~~Constructing permanent access roads and repaving the dam access road; and~~
- ~~Repaving Calaveras Road.~~
- Preparing Disposal Site G to receive disposal material;
- Complete left abutment excavation;
- Complete spillway and stilling basin excavation;
- Complete dam foundation excavation;
- Grouting the left abutment; and
- Begin excavating Borrow Area E.

In the fifth construction season, assumed to be 2015, work would primarily include:

- Starting importation of 298,300 cubic yards of filter and drain materials for dam construction;
- Begin constructing replacement dam; and
- Installing downstream outlet pipe.

In the sixth construction season, assumed to be 2016, work would primarily include:

- Complete importing filter and drain materials for dam construction;
- Complete constructing replacement dam;
- Constructing spillway and chute;
- Constructing stilling basin;
- Interconnecting the old and new intake shafts and connecting to outlet conduit;
- Excavating channel in the existing dam; and
- Constructing spillway bridge.

In the seventh construction season, assumed to be 2017, work would primarily include:

- Constructing the downstream electrical building, and utilities;

- Constructing permanent access roads and repaving the dam access road;
- Restoring disposal sites, borrow areas, staging areas, and haul roads; and
- Repaving Calaveras Road.

The ACDD bypass facility would be constructed in a low-flow period sometime during the ~~4~~ 7-year construction period for the CDRP. In most years, the Alameda Creek bed at the ACDD is dry during summer.

Construction activity would generally consist of two 10-hour shifts per day, 6 days per week. The major earth-moving activities would follow this schedule, except blasting, which would be restricted to Monday through Friday. Refueling and lubrication of the equipment would occur between shifts 6 days per week. Equipment maintenance and repair would occur at various times 24 hours per day, 7 days per week. Underground excavation for the intake shaft and adits would be done in two or three 8-hour shifts per day, 6 days a week. Hauling of materials from off site may occur during weekdays from 7 a.m. to 5 p.m., or may occur at night. If at night, hauling would likely occur between 5 p.m. and 7 a.m. Monday through Friday. Importing off-site materials (sand and gravel) for dam construction would start in winter 2014 and would last about 18 months.

Each year, fill placement (and borrow) operations would occur during a 9-month construction season (approximately from spring to the end of the year). Foundation excavation operations could proceed year-round. Construction of the dam embankment would require about 24 months. Rockfill placement in the upstream shell of the dam could proceed during the winter months. Other operations, such as foundation grouting and concrete and mechanical work associated with the spillway and intake shaft, could occur over an approximately ~~3~~ 4-year construction period.

### **Construction Workers**

Table 3.6 of the EIR shows the number of construction workers for the different phases of project construction for the adopted project. As shown in the **Table 4** below, the number of construction workers on the site under the modified project would be similar to the adopted project and would not exceed the maximum number of workers identified in the EIR during any phase of construction (i.e. 140 workers per day, 50 workers per night). Total construction workers by construction phase under the modified project are shown in Table 4 in ~~strikethrough~~ and underline format to highlight revisions from the EIR for the adopted project.

### **Construction Equipment and Vehicles**

Appendix G of the EIR identifies the types and numbers of construction-related vehicles, haul trucks and heavy equipment required for construction of the adopted project. As discussed above, the proposed project modifications would involve the same types of construction activities and the same numbers of workers throughout the additional three-year construction period as the adopted project. Similarly, the proposed project modifications would be carried out using the same types and numbers of construction equipment and vehicles as those identified in the EIR for the adopted project.

**Table 4: Number of Construction Workers by Time Period**

<i>Time Period</i>	<i>Number of Workers (approximate)</i>	
	<b>Day</b>	<b>Night</b>
<del>Spring</del> Summer 2011	70	10
Summer and fall 2011	100	20
Winter 2011	70	20
Spring 2012	70	20
Summer and fall 2012	100	20
Winter 2012	75	20
Spring, summer, and fall 2013	130	50
Winter 2013	90	20
Spring, summer, and fall 2014	140	50
Winter 2014	70	20
<u>Spring, summer, and fall 2015</u>	<u>140</u>	<u>50</u>
<u>Winter 2015</u>	<u>70</u>	<u>20</u>
<u>Spring, summer, and fall 2016</u>	<u>100</u>	<u>50</u>
<u>Winter 2016</u>	<u>70</u>	<u>20</u>
<u>Spring, summer, and fall 2017</u>	<u>100</u>	<u>50</u>
<u>Winter 2017</u>	<u>70</u>	<u>20</u>

## APPROVALS REQUIRED

The project modifications described in this addendum would require several approval actions, which are expected to occur between December, 2012 and January, 2013. The expected approval actions are listed below.

### San Francisco Public Utilities Commission

- Regional Project Manager authorization of contract modifications to allow disposal of excavated material in proposed in-water disposal sites F and I (December 2012)
- Commission authorization of increased project funding to enable implementation of remaining project modifications (January 2013)

### California Department of Fish and Game

- Amendment to previously approved California Fish and Game Code Section 1602 Streambed Alteration Agreement
- Amendment to previously approved California Fish and Game Code Section 2081(b) Incidental Take Permit

**San Francisco Bay Regional Water Quality Control Board**

- Amendment to previously approved Federal Clean Water Act Section 401 Water Quality Certification/California Porter-Cologne Water Quality Control Act Waste Discharge Requirement

**United States Fish and Wildlife Service**

- Amendment to previously approved Federal Endangered Species Act Section 7 Biological Opinion

**United States Army Corps of Engineers**

- Amendment to previously approved Federal Clean Water Act Section 404 Individual Permit for discharge of dredged or fill material into Waters of the United States

**ANALYSIS OF ENVIRONMENTAL EFFECTS**

Section 31.19(c)(1) of the San Francisco Administrative Code states that a modified project must be reevaluated and that, "If, on the basis of such reevaluation, the Environmental Review Officer determines, based on the requirements of CEQA, that no additional environmental review is necessary, this determination and the reasons therefore shall be noted in writing in the case record, and no further evaluation shall be required by this Chapter."

California Environmental Quality Act (CEQA) Guidelines Section 15164 provides for the use of an addendum to document the basis for a lead agency's decision not to require a subsequent EIR for a project that is already adequately covered in a previously certified EIR. The lead agency's decision to use an addendum must be supported by substantial evidence that the conditions that would trigger the preparation of a Subsequent EIR, as provided in CEQA Guidelines Section 15162, are not present.

The certified Final EIR for the adopted project determined that environmental impacts would result generally from three primary aspects of the adopted project: construction activity; restoration of the reservoir water level to pre-DSOD restriction levels; and future reservoir operations, in particular as they affect flows within Alameda Creek downstream of the Alameda Creek Diversion Dam (ACDD), and Calaveras Creek below Calaveras Dam. The proposed project modifications concern a portion of construction activities only. However, for context, the impacts associated with each of these project aspects are briefly summarized below.

***Construction Impacts***

Adverse environmental impacts associated with construction of the adopted project identified in the EIR include:

**Land Use** impacts, including disruption to established grazing and recreational uses in the project vicinity as a result of excavation, blasting, soils movement, grading, re-contouring of slopes, and other construction activity;

**Vegetation and Wildlife** impacts, including temporary and permanent filling of wetlands, as well as potential killing or injury of special-status plant and animal species in the project area, as a result of truck traffic and equipment operation, soils movement, sedimentation, erosion, runoff, or hazardous materials release;

**Fisheries and Aquatic Habitat** impacts, within the reservoir and nearby creeks, as a result of equipment operation, soils movement, sedimentation, erosion, runoff or hazardous materials release, affecting water quality and/or aquatic habitat, as well as fish;

**Hydrology** impacts (i.e., changes in flow rates) within Alameda and Calaveras Creeks during certain periods of construction, resulting in changes in flow velocity, quantity, and channel morphology;

**Water Quality** impacts in the reservoir and creeks, consisting of changes in water quality parameters (turbidity, temperature, dissolved oxygen, nutrients) as a result of equipment operation, soils movement, sedimentation, erosion, runoff, or hazardous materials release;

**Hazards and Hazardous Materials** impacts, either through excavation of hazardous substances or through accidental spills, causing release of or exposure to hazardous materials;

**Cultural Resource** impacts resulting from excavation;

**Visual Resources** impacts resulting from construction activities and excavation of large quantities of borrow material from hillsides and other natural areas in the project area;

**Transportation and Circulation** impacts through reduction in roadway capacity, increases in truck and other construction vehicle traffic, impaired access, and wear and tear on roads;

**Air Quality** impacts due to construction-related emissions or releases of air pollutants and precursors, resulting from equipment operation, truck and vehicle traffic, excavation, soils movement, and grading; and

**Noise** impacts from construction equipment and activity (e.g., excavation, loading, blasting, hauling), including nighttime construction activity.

#### ***Impacts from Restoration of Reservoir Water Level***

Adverse environmental impacts associated with the change in reservoir water level identified in the EIR include:

**Vegetation and Wildlife** impacts, including flooding of wetlands, as well as disruption or harm to special-status plant and animal species in the project area, as a result of permanently submerging, periodically inundating and occasionally wetting areas around perimeter of existing reservoir that are presently above the reservoir water level;

**Fisheries and Aquatic Habitat** impacts, within the reservoir and creek upstream of the reservoir, as a result of changes in reservoir water levels, water quality parameters, shoreline habitat and connection with an upstream creek;

**Cultural Resources** impacts on known archaeological resources and unknown paleontological resources as a result of the change in reservoir water levels; and

**Water Quality** impacts in the reservoir as a result of new water depths (changes in water quality parameters, such as temperature, nutrients, and dissolved oxygen) and new water levels, putting the reservoir in contact with borrow materials containing metals or other contaminants.

#### ***Operational Impacts***

The Final EIR did not identify significant adverse environmental impacts associated with future reservoir operations. Less than significant effects and beneficial environmental effect identified in the EIR include:

**Hydrology** – Operational effects on flows, channel formation, and sedimentation in Alameda and Calaveras Creeks will be within the range of pre-project conditions. In general, on an average annual basis, there will be a reduction in flows within Calaveras Creek in some winter months and an increase in

flows during most other months of the year. Within Alameda Creek, on an average annual basis, there will be a decrease in flows in some winter months and an increase in flows in other months. Overall, within both creeks, the adopted project will result in a slight increase in flows on a net annual average basis and will maintain periodic peak flows.

**Vegetation and Wildlife** – Operation of the adopted project will improve habitat conditions for aquatic wildlife within certain reaches of Alameda and Calaveras Creeks by providing more stable and reliable habitat during sensitive periods. These improvements will benefit sensitive native species, including California red-legged frog and foothill yellow-legged frog, but will also benefit predatory non-native bullfrogs.

**Fisheries and Aquatic Habitat** – The EIR determined that flow releases proposed under the adopted project will likely provide a more stable and reliable habitat for fish, and higher magnitude channel maintenance flows will continue similar to existing conditions. Thus, the EIR concluded that the adopted project will result in beneficial effects on native fish in Alameda and Calaveras Creeks.

Based upon the review and analysis of the modified project described in this Addendum, the modified project does not entail any substantial changes that would require major revisions to the EIR, nor would new significant environmental effects or a substantial increase in the severity of previously identified significant effects occur. Since certification, other than as explained and discussed in this Addendum, no changes have occurred in the project or in the circumstances under which the adopted project would be undertaken, and no new information has emerged that would materially change any of the analyses or conclusions of the EIR. Therefore, no additional environmental review is necessary beyond this Addendum.

## ENVIRONMENTAL EFFECTS OF THE MODIFIED PROJECT

The scope of and approach to analysis of the modified project is identical to that of the adopted project evaluated in the EIR. This section presents results of the analysis of the modified project, which is based on the same significance criteria and the same setting information presented in the EIR. This section presents a discussion of the same 15 environmental resource areas as presented in the EIR and reiterates the same impact statements from the EIR (using the same impact numbering system), discusses the applicability of each impact and mitigation measure to the modified project (using the same mitigation measure numbering system), and provides an impact conclusion and significance determination for the modified project. This section also demonstrates why the impact analysis of the modified project does not require major revisions to the EIR.

As shown below, in all cases, the modified project would result in determinations of the same impacts in comparison to the adopted project. The modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required. Similar to the adopted project and for the same reasons, the modified project would not cause impacts related to Wind and Shadow, or Population and Housing, and these topics are not discussed further in this addendum. In addition, the proposed project modifications would not affect future operations of the dam or reservoir. Under the modified project, the SFPUC would refill the reservoir to the pre-DSOD restricted level of 756 feet and implement instream flow releases to enhance habitat conditions for fish and other aquatic species in the same manner as described in the EIR for the adopted project. Because the proposed project modifications would not alter the impacts described in the EIR related to refilling or future operations of the reservoir, the following impacts of



future reservoir operations on regional water supply, vegetation and wildlife, fisheries and aquatic habitats, hydrology, water quality, geology, soils and seismicity, hazards and hazardous materials and other resource topics addressed in the EIR are not discussed further in this addendum:

- Impact 4.3.2: Impact of project operations on existing and/or planned land uses in the vicinity of proposed facilities
- Impact 4.3.5: Impact of project operations on agricultural uses in the project vicinity
- Impact 4.5.7: Effects of project operations on fish habitat in Calaveras Reservoir and in streams upstream of the replacement dam
- Impact 4.5.8: Effects of project operations on native fish in Alameda Creek in the extended study area
- Impact 4.6.4: Operational effects on flows in Calaveras Creek downstream of Calaveras Dam
- Impact 4.6.5: Operational effects on flow in Alameda Creek downstream of the ACDD to the Calaveras Creek confluence
- Impact 4.6.6: Operational effects on flow in Alameda Creek, Calaveras Creek confluence to Arroyo de la Laguna confluence
- Impact 4.6.7: Operational effects on flow in Alameda Creek downstream of the Arroyo de la Laguna confluence
- Impact 4.6.8: Downstream flooding and hazard in the event of dam failure
- Impact 4.6.9: Effects on channel formation and sediment transport along Calaveras Creek
- Impact 4.6.10: Effects on channel formation and sediment transport along Alameda Creek downstream of the ACDD to the Calaveras Creek confluence
- Impact 4.6.11: Effects on channel formation and sediment transport along Alameda Creek downstream of the Calaveras Creek confluence
- Impact 4.6.12: Changes in groundwater levels, flows, quality, and supplies
- Impact 4.7.5: Changes in water quality parameters in Calaveras Reservoir during future operation and restoration of pre-DSOD restricted reservoir conditions
- Impact 4.7.6: Changes in water quality parameters in Calaveras and Alameda Creeks during future operation
- Impact 4.8.7: Induced seismic activity from reservoir refilling
- Impact 4.10.3: Impact of restoration of reservoir water levels and project operations on known archaeological resources
- Impact 4.10.6: Impact of restoration of reservoir water levels and project operations on unknown paleontological resources
- Impact 4.11.3 Impact of project operations on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness

- Impact 4.12.6: Long-term traffic associated with operation and maintenance of the replacement dam
- Impact 4.13.2: Impact of long-term generation of regional and local criteria air pollutants and precursors
- Impact 4.13.4: Impact of exposing sensitive receptors to long-term emissions of TACs
- Impact 4.14.5: Disturbance due to long-term noise increases associated with operation of project facilities
- Impact 4.16.3: Impact of using electric power to operate the replacement dam and filled reservoir

## PLANS AND POLICIES

The EIR discusses plans and policies relevant to the adopted project. Plans and policies relevant to the modified project are identical to those for the adopted project, and the consistency of the modified project with those plans and policies is also identical to that described in EIR.

The EIR provides an evaluation of the project's consistency with various San Francisco and applicable local plans and policies. The analysis concludes that, with mitigation, the adopted project would not conflict with these plans and policies.

The modified project would result in additional excavation of the left dam abutment landslide to resolve a geological hazard and disposal of the additional excavated material. These modifications would not alter the nature or purpose of the project, nor would they affect planning areas that were not considered in the EIR for the adopted project. In addition, the left dam abutment and proposed disposal sites are located entirely on property owned by the City and County of San Francisco (CCSF) and, consistent with California Government Code Section 53090, would not be subject to the planning and building laws of other cities and counties, including Alameda and Santa Clara Counties.

Because it would not change the basic characteristics of the adopted project or alter the project's overall consistency with San Francisco and applicable local land use plans and policies as presented in the EIR, the modified project would not result in any new significant impacts beyond those identified in the EIR or substantially increase the severity of any significant impacts, and no new mitigation measures would be required.

## LAND USE, AGRICULTURAL RESOURCES, AND RECREATION

Existing land uses, agricultural uses, and recreational uses in the vicinity of the modified project are the same as described for the adopted project. As described below, the proposed project modifications would not result in any new significant effects on land use, agricultural resources, or recreation beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.3.1 Impact of construction of the modified project on the existing character of the project vicinity**

The EIR determined that construction activities for the adopted project would not substantially alter the existing character of the project vicinity given the nature of land uses in the area and the substantial

distance between the project site and neighboring land uses. Construction activities and associated traffic under the modified project, while incrementally greater in duration, would be similar to the current activities associated with the adopted project. Similar to the adopted project, the modified project construction activities would not interfere with land uses in the vicinity, including operation of the quarries, water system facilities, and nurseries; the overall nature of the project area would remain essentially unchanged. Thus, similar to the adopted project, temporary construction impacts for the modified project on the existing character of the vicinity would be less than significant.

The nature and magnitude of this impact is similar to that for the adopted project. The proposed work sites for the modified project are within areas that would already experience some level of disruption described for the adopted project. Construction activities for the additional landslide abatement at the left dam abutment and the additional spoils disposal areas would occur in the same general work area identified for the construction of the adopted project. However, the left dam abutment excavation would affect an additional 4.1 acres and the disposal sites would affect an additional 29.1 acres outside of the footprint of the adopted project. This increase in the project footprint would be minor relative to the 600 acre footprint of the adopted project and these additional work areas are not open to public access. Construction would last approximately three years longer than the four-year construction period identified for the adopted project; however the daily number of workers and construction equipment would be substantially similar to the adopted project. Total truck trips within the project site would increase proportionally to the lengthened schedule. As described for the adopted project, the modified project could impact the character of the project vicinity due to the temporary incremental increase in the amount of noise and dust associated with the additional construction activities. However, given the distance and intervening topography between the project site and nearby land uses, daytime construction-related noise increases would be less than significant. Implementation of the previously identified Mitigation Measure 5.9.2a, Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program, as applicable, would reduce the impacts associated with the incremental increase in dust to a less-than-significant level. Furthermore, because the modified project work areas for the left dam abutment spoils disposal areas would be located off road and outside of any recreation areas, the modified project would not increase on-road haul truck trips. Therefore, the proposed project modifications would have limited additional effects on access to recreational facilities or on bicyclists using Calaveras Road. Implementation of Mitigation Measures 5.12.4a (Traffic Control Plan); 5.12.4b (Approval of Road Closures); 5.13.1a, 5.13.1b, 5.13.3a, 5.13.3b (Dust and Exhaust Emissions); and 5.14.1 (Noise Controls) would also be applicable to the modified project, and would further reduce the less-than-significant impacts associated with the additional excavation and disposal activities. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.3.3: Consistency of modified project with applicable land use plans, policies, and regulations adopted to avoid environmental impacts**

The EIR determined that the adopted project would not conflict with adopted plans and policies. For the identical reason described in the EIR for the adopted project, the proposed project modifications would not conflict with adopted plans and policies, and no relevant plans beyond those identified in the EIR have been identified in association with the project modifications. Construction and operation of the modified project would not result in any permanent conflicts with the strategies, goals, or policies applicable to the SFPUC or adjacent county lands. Therefore, the modified project would not result in any

new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.3.4: Impact of construction activities on grazing land**

As discussed in the EIR, construction of the adopted project would disturb 137 acres of grazing land. The EIR determined that the impact on grazing land would be temporary because the affected grasslands would be restored following project construction and the remaining the 32,000 acres of SFPUC land available for grazing in the Alameda Watershed would be unaffected by the adopted project. Other than grazing, there are no agricultural uses along the right-of-way outside of the SFPUC property. The EIR concluded therefore that the adopted project would have a less-than-significant impact on agricultural uses.

Proposed Disposal Site G would temporarily remove an additional approximately 0.5 acre of grazing land beyond the 137 acres affected by the adopted project, a small increase. Similar to the adopted project, grasslands would be restored at Disposal Site G following completion of construction. Thus, implementation of the modified project would incrementally increase the acreage that would be temporarily removed from grazing during project construction, but would have a negligible effect on grazing lands given the approximately 32,000 acres of SFPUC land that would remain available for grazing. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.3.6: Impact of construction activities on established recreational uses in the vicinity of the proposed project site**

The EIR determined that the adopted project would result in temporary impacts on recreational uses from construction-related traffic, noise, and off-site emissions of dust. The proposed project modifications would result in an incremental increase in this impact compared with the adopted project. As with the adopted project, this significant impact would be mitigated to a less-than-significant level through implementation of Mitigation Measures 5.12.4a (Traffic Control Plan); 5.12.4b (Approval of Road Closures); 5.13.1a, 5.13.1b, 5.13.3a, 5.13.3b (Dust and Exhaust Emissions); and 5.14.1 (Noise Controls). Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.1: Cumulative impacts on land use, agricultural resources, and recreation**

As described in the EIR for the adopted project, the geographic scope for cumulative impacts of the modified project on land use, agricultural resources, and recreational resources is identical to that of the adopted project; namely, the Alameda Creek watershed, the Sunol Valley, and the regional recreation areas that surround the Calaveras Reservoir. As described above, the modified project would not change existing land uses, have significant impacts on agricultural resources, or degrade existing recreational resources.

Similar to the adopted project, construction of the modified project would not interfere with land uses in the vicinity, including operation of the quarries, water system facilities, and nurseries. Thus, similar to the adopted project, temporary construction impacts for the modified project on the existing character of the

vicinity would not have a substantial contribution to any cumulative impact on existing land uses in the project vicinity.

As described for the adopted project, the modified project would not make a substantial contribution to any region-wide cumulative losses of agricultural land in the Bay Area, and its contribution to cumulative impacts on agricultural resources would be less than significant.

As with the adopted project, the modified project would not change the demand for recreational resources. However, ongoing and future projects summarized in Table 6.1 of the EIR could disrupt access to recreational resources if they resulted in substantial amounts of truck traffic or lane closures on Calaveras Road. The modified project would not result in temporary weekday closure of Calaveras Road beyond impacts analyzed for the adopted project, and implementation of Mitigation Measure 5.12.4a (Traffic Control Plan) would reduce the modified project's contribution to cumulative impacts on access to recreational areas to a less-than-significant level. This mitigation measure also includes provisions for the SFPUC to repair roads to their original condition, if needed, which would reduce the modified project's contribution to cumulative impacts related to deterioration of roadway conditions that could affect recreationists in the area to a less-than-significant level.

## VEGETATION AND WILDLIFE

The vegetation and wildlife setting for the modified project is the same as the study area described in the EIR for the adopted project. As described below, implementation of the adopted project would not result in any new significant effects on vegetation and wildlife beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required. However, in some cases, the modified project would result in an incremental increase in the affected acreage for predicted impacts on special-status species and sensitive habitats, and the mitigation measures for the modified project have been adjusted accordingly.

### **Impact 4.4.1: Effect of modified project on wetlands and other aquatic habitats**

As discussed in the EIR, construction activities for the adopted project would result in temporary and permanent loss of an estimated 1.06 acres of freshwater marsh, 1.37 acres of seasonal wetlands, 0.91 acre of seep wetlands, 0.11 acre of pond, 0.56 acre (1,442 linear feet) of perennial streams, 0.09 acre (1,494 linear feet) of intermittent streams, and 0.10 acre (3,093 linear feet) of ephemeral streams. The EIR concluded that implementation of Mitigation Measures 5.4.2 (Habitat Restoration Measures) and 5.4.3 (Compensation Measures) would reduce these impacts to a less-than-significant level. The modified project work areas located outside the adopted project work limits do not contain wetland, pond or stream habitat; therefore, the proposed project modifications would not involve direct disturbance or fill of wetlands, ponds or streams beyond that identified in the EIR for the adopted project.

Similar to the adopted project, sediment or other pollutant discharges could be released during excavation of the left dam abutment and placement of material in the additional disposal sites, which could degrade wetland and stream habitat. As with the adopted project, implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.7.1 (Storm Water Pollution Prevention Plan) would minimize and avoid these impacts to the extent feasible and would prevent water quality degradation. Therefore, the modified project would not result in any new significant effects on wetlands or streams beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

The proposed placement of spoils at Disposal Sites F, H, I and 2 would place a total of 1.86 million cubic yards of material below the future inundation zone of the restored reservoir, resulting in 12.7 acres of new permanent fill of open water.<sup>9</sup> While this increase in fill of open water is substantial relative to the 1.7 acres of permanent fill for Disposal Sites 3 and 7 under the adopted project, the additional fill would be more than offset by the increase in reservoir area resulting from the project. As described in the EIR, by restoring the reservoir to its pre-DSOD restricted level of 756 feet, the adopted project would increase the open water area of the reservoir by 444 acres. The proposed placement of 1,200 cubic yards of material within the future inundation zone of the reservoir at Disposal Site H under the modified project would slightly reduce the increase in reservoir area from 444 acres to 443.3 acres. However, even with this change, the modified project would still result in a net increase of 443.3 acres of open water habitat compared to the existing condition. Therefore, although the modified project would result in additional fill of open water within the reservoir, the modified project would not result in any new significant effects on open water habitat beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.2: Effect of modified project on California red-legged frog**

As discussed in the EIR, the adopted project would have a significant adverse impact on California red-legged frog, which is listed as threatened under the federal Endangered Species Act (FESA) and is a California species of special concern. The modified project would result in an incremental increase in direct and indirect impacts on California red-legged frog. Specifically, the proposed placement of materials at Disposal Sites A/D, F, and G would result in the additional permanent loss of 16.5 acres of California red-legged frog upland refuge and dispersal habitat. This permanent loss of habitat would represent a minor increase over the permanent loss of 656 acres of California red-legged frog upland refuge and dispersal habitat for the adopted project as disclosed in the EIR (**Table 5** below summarizes permanent habitat impacts). Under Mitigation Measure 5.4.3a, the SFPUC will fully compensate for the loss of California red-legged frog upland habitat by enhancing and/or protecting and maintaining upland habitat at one or more mitigation areas, with resource agency concurrence. Five mitigation areas: South Calaveras, San Antonio, Sage Canyon, Goat Rock, and Koopman Road Mitigation Areas are described in the EIR. Adequate and feasible opportunities are available at the Goat Rock Mitigation Area to fully compensate for the additional loss of 16.5 acres of California red-legged frog upland refuge and dispersal habitat.<sup>10</sup>

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<sup>9</sup> The remainder of the 200,000 cubic yards of spoils proposed to be disposed at these sites would be placed above the 756-foot future inundation zone of the reservoir.

<sup>10</sup> Lyman, Greg, SFPUC, Email to Brett Becker, SFPUC, November 30, 2012.

**Table 5: Summary of Permanent Habitat Impacts**

Species	Habitat Type	Impact of Adopted Project	Impact of Prior Minor Project Modifications	Impact of Proposed Modified Project	Total Impact
California red-legged frog	Upland refuge and dispersal	656 acres	0 acres	16.5 acres	672.5 acres
California tiger salamander	Upland refuge, forage, and dispersal	501.4 acres	4.9 acres	16.5 acres	522.8 acres
Alameda whipsnake	Woodland and grassland	607.4 acres	5.6 acres	16.5 acres	629.5 acres
N/A	Oak Woodland and Savannah	24.3 acres	0 acres	0.7 acres	25 acres

Disposal Sites H and I would either be located within the construction footprint of the adopted project or below the future inundation level of the restored reservoir where the EIR already assumes impacts on any existing California red-legged frog habitat. Therefore, the placement of spoils at proposed Disposal Sites H and I would not result in any additional impacts on California red-legged frog habitat at these sites beyond that identified in the EIR for the adopted project.

In addition to the loss of 16.5 acres of upland refuge and dispersal habitat discussed above, construction activities associated with the modified project could have adverse impacts on California red-legged frog. If frogs were present in these areas during construction, activities such as earthmoving, operation of heavy equipment, movement of haul trucks, and trenching could result in direct injury or mortality of California red-legged frogs. These impacts would be comparable in nature and magnitude to the temporary construction impacts of the adopted project that are described in the EIR. With implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.4.2 (Habitat Restoration Measures), which require construction worker education about the importance of avoiding harm to special-status species and habitat, preconstruction surveys, exclusion fencing, and other measures to avoid and minimize impacts on sensitive species during project construction, and post-construction habitat restoration, temporary impacts on California red-legged frog during construction of the modified project would be less than significant.

To account for the 16.5-acre increase in the permanent loss of upland refuge and dispersal habitat under the modified project, Mitigation Measure 5.4.3a is adjusted as follows:

- California Red-legged Frog Habitat.** ...fully compensate for permanent impacts on approximately 2.33 acres and 4,387 linear feet of California red-legged frog aquatic non-breeding and ~~656~~ 672.5 acres of upland habitat...

Therefore, the modified project would not result in any new significant effects on California red-legged frog beyond those identified in the EIR or a substantial increase in the severity of a significant impact.

Implementation of the mitigation measures identified in the EIR, as adjusted for the modified project and discussed above, would reduce the impacts of the modified project to a less-than-significant level.

**Impact 4.4.3: Effect of modified project on California tiger salamander**

As discussed in the EIR, the adopted project would have a significant adverse impact on California tiger salamander, which is federally listed as threatened in the project area and is a candidate for listing as endangered under the California Endangered Species Act (CESA). The modified project would result in an incremental increase in direct and indirect impacts on California tiger salamander. As shown in Table

5, the proposed placement of materials at Disposal Sites A/D, F, and G would result in the permanent loss of 16.5 acres of California tiger salamander upland refuge, forage and dispersal habitat. This permanent loss of habitat would represent a minor increase over the permanent loss of 501.4 acres of California tiger salamander upland habitat for the adopted project as disclosed in the EIR. Under Mitigation Measure 5.4.3a, the SFPUC will fully compensate for the loss of California tiger salamander upland habitat with resource agency concurrence. Five mitigation areas: South Calaveras, San Antonio, Sage Canyon, Goat Rock, and Koopman Road Mitigation Areas are described in the EIR. Adequate and feasible opportunities are available at the Goat Rock Mitigation Area to fully compensate for the additional loss of California tiger salamander upland refuge, forage and dispersal habitat.

Disposal Sites H and I would either be located within the construction footprint of the adopted project or below the future inundation level of the restored reservoir where the EIR already assumes impacts on any existing California tiger salamander habitat. Therefore, the placement of spoils at proposed Disposal Sites H and I would not result in any additional impacts on California tiger salamander habitat at these sites beyond that identified in the EIR for the adopted project.

In addition to the loss of 16.5 acres of habitat discussed above, construction activities associated with the modified project could have adverse impacts on California tiger salamander. If salamanders were present in these areas during construction, activities such as earthmoving, operation of heavy equipment, movement of haul trucks, and trenching could result in direct injury or mortality. These impacts would be comparable in nature and magnitude to the temporary construction impacts of the adopted project that are described in the EIR. With implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.4.2 (Habitat Restoration Measures), which require construction worker education about the importance of avoiding harm to special-status species and habitat, preconstruction surveys, exclusion fencing, and other measures to avoid and minimize impacts during construction, and post-construction habitat restoration, temporary impacts on California tiger salamander during construction of the modified project would be less than significant.

To account for the 16.5-acre increase in the permanent loss of upland refuge, forage and dispersal habitat under the modified project, Mitigation Measure 5.4.3a is adjusted as follows:

- **California Tiger Salamander Habitat.** ...fully compensate for permanent impacts on ~~972.0~~<sup>11</sup> 522.8 acres of upland habitat....

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<sup>11</sup> Mitigation Measure 5.4.3a in the final EIR erroneously indicates 972.0 acres of impact on California tiger salamander habitat due to a typographical error. The actual area of California tiger salamander habitat impact under the adopted project as quantified in the EIR impact analysis and relevant state and federal permits is 501.4



Therefore, the modified project would not result in any new significant effects on California tiger salamander beyond those identified in the EIR or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the modified project and discussed above, would reduce the impacts of the modified project to a less-than-significant level.

**Impact 4.4.4: Effect of the modified project on Alameda whipsnake**

As discussed in the EIR, the adopted project would have a significant adverse impact on Alameda whipsnake, which is federally and state listed as threatened. The modified project would result in an incremental increase in direct and indirect impacts on Alameda whipsnake. As shown in Table 5, the proposed placement of materials at Disposal Sites A/D, F, and G would result in the permanent loss of 16.5 acres of annual grasslands potentially used by Alameda whipsnakes for foraging and dispersal. This permanent loss of habitat would represent a minor increase over the permanent loss of 607.4 acres of Alameda whipsnake woodland and grassland habitat for the adopted project as disclosed in the EIR. Under Mitigation Measure 5.4.3a, the SFPUC will fully compensate for the loss of Alameda whipsnake habitat with resource agency concurrence. Five mitigation areas: South Calaveras, San Antonio, Sage Canyon, Goat Rock, and Koopman Road Mitigation Areas are described in the EIR. Adequate and feasible opportunities are available at the Goat Rock Mitigation Area to fully compensate for the additional loss of Alameda whipsnake habitat.

Disposal Sites H and I would either be located within the construction footprint of the adopted project or below the future inundation level of the restored reservoir where the EIR already assumes impacts on any existing Alameda whipsnake habitat. Therefore, the placement of spoils at proposed Disposal Sites H and I would not result in any additional impacts on Alameda whipsnake habitat at these sites beyond that identified in the EIR for the adopted project.

In addition to the loss of 16.5 acres of habitat discussed above, construction activities associated with the modified project could have adverse impacts on Alameda whipsnake. If snakes were present in these areas during construction, activities such as earthmoving, operation of heavy equipment, movement of haul trucks, and trenching could result in direct injury or mortality. These impacts would be comparable in nature and magnitude to the temporary construction impacts of the adopted project that are described in the EIR. With implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.4.2 (Habitat Restoration Measures), which require construction worker education about the importance of avoiding harm to special-status species and habitat, preconstruction surveys, exclusion fencing, and other measures to avoid and minimize impacts during construction and post-construction habitat restoration, temporary impacts on Alameda whipsnake during construction of the modified project would be less than significant.

To account for the 16.5-acre increase in the permanent loss of grassland habitat under the modified project, Mitigation Measure 5.4.3a is adjusted as follows:

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acres. The compensation acreage is adjusted to reflect both the 16.5-acre increase in upland habitat impact that would result from the proposed project modifications described in this addendum and the 4.9-acre increase from the prior minor project modifications listed in Table 1.

- **Alameda Whipsnake Habitat.** ...fully compensate for permanent impacts to ~~607.4~~ 629.5<sup>12</sup> acres of woodland and grassland habitat...

Therefore, the modified project would not result in any new significant effects on Alameda whipsnake beyond those identified in the EIR or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the modified project and discussed above, would reduce the impacts of the modified project to a less-than-significant level.

**Impact 4.4.5: Effect of the modified project on callippe silverspot butterfly**

The EIR determined that construction of the adopted project will have a significant adverse impact on the federally endangered callippe silverspot butterfly through the destruction of grasslands that support the larval host plant (Johnny jump-up), removal of nectar plants, and loss of individuals. The EIR also determined that dust generated during construction could smother larval host plants. The EIR concluded that these impacts will be less than significant with the implementation of Mitigation Measures 5.13.1a and 5.13.1b (Air Quality) and 5.9.2a (Hazards and Hazardous Materials), which requires measures to control dust and avoid direct impacts, and Mitigation Measure 5.4.3 (Compensation Measures) which will compensate for the direct and indirect loss of larval habitat by protecting and enhancing existing grasslands containing the larval host plant.

The modified project would have no additional impact on habitat for callippe silverspot butterfly because habitat for this species is not present in the additional work areas. Indirect impacts, resulting from dust generated by construction in the additional work areas, would be strictly controlled in accordance with Mitigation Measures 5.9.2a and 5.13.1a. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.6: Effect of the modified project on bald eagle**

The EIR determined that construction of the adopted project could have a significant adverse impact on bald eagles if they were nesting near project activities during the construction period. Specifically, the EIR determined that truck trips on the west haul route and blasting required for the dam foundation and spillway and at Borrow Area B could result in a significant impact on nesting bald eagles if present during these activities. This significant impact of the adopted project is reduced to a less-than-significant level through ongoing implementation of Mitigation Measure 5.4.1a (Avoidance and Minimization Measures), which specifies that a qualified biologist conduct monitoring in the months of December, January, and February, before construction begins, to determine whether bald eagles are nesting at Calaveras Reservoir, and that a minimum 660-foot no-disturbance buffer be established around any active bald eagle nest near the construction site, among other provisions.

Similar to the adopted project, the modified project could have a significant adverse impact on bald eagles if they were nesting near project activities during the additional three-year construction period.

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<sup>12</sup> The compensation acreage is adjusted to reflect both the 16.5-acre increase in woodland and grassland habitat impact that would result from the proposed project modifications described in this addendum and the 5.6-acre increase from the prior minor project modifications listed in Table 1.

Although bald eagles do not nest in the vicinity of the additional work areas, blasting for excavation of the left dam abutment under the modified project could result in a significant impact on nesting bald eagles if present during these activities. As with the adopted project, implementation of Mitigation Measure 5.4.1a as described above would reduce impacts of the modified project on bald eagles to a less-than-significant level. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.7: Effect of the modified project on foothill yellow-legged frog**

The EIR determined that construction activities for the adopted project within Calaveras and Alameda Creeks could have a significant adverse impact on foothill yellow-legged frog, which is a state species of special concern. The EIR concluded this significant impact will be reduced to a less-than-significant level with implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.7.1 (Storm Water Pollution Prevention Plan) by requiring preconstruction avoidance and minimization measures and preventing water quality degradation. Specifically, Mitigation Measure 5.4.1a requires that a qualified biologist perform preconstruction surveys of suitable foothill yellow-legged frog habitat 2 weeks before work activities begin and immediately after work commences; the survey requirements include other measures to be taken, including consultation with USFWS and CDFG if foothill yellow-legged frogs in any life stages are found. Mitigation Measure 5.4.1b requires that stream crossing construction activities be timed to minimize impacts on foothill yellow-legged frog, and that stream crossings be installed and removed during dry conditions. Mitigation Measure 5.4.3 (Compensation Measures) would compensate for temporal, long-term, and permanent impacts.

The modified project would not result in additional disturbance to foothill yellow-legged frog habitat in Calaveras or Alameda Creeks. As with the adopted project, implementation of the avoidance and minimization measures required under Mitigation Measures 5.4.1 and 5.7.1 would reduce impacts on foothill yellow-legged frog during construction of the project modifications to a less-than-significant level. Therefore, the proposed project modifications would not result in any new significant effects on foothill yellow-legged frog beyond those identified in the EIR for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.8: Effect of the modified project on Heermann's kangaroo rat**

As with the adopted project, the modified project would not result in the loss of potential Heermann's kangaroo rat habitat or direct mortality of this species. For the same reasons provided in the EIR for the adopted project, the modified project would have no impact on this species; thus, there would be no change in the impact as evaluated in the EIR for the adopted project.

**Impact 4.4.9a: Effect of the modified project on western pond turtle**

The EIR determined that construction of the adopted project could result in direct mortality of western pond turtle in Calaveras and Alameda Creeks and one pond, and the permanent loss of 945 linear feet of aquatic habitat in Calaveras Creek and 0.11 acre of pond habitat. The EIR concluded that implementation of Mitigation Measure 5.4.1a (Preconstruction Measures), which requires preconstruction surveys of aquatic habitat, dewatering of aquatic areas that cannot be feasibly avoided during construction, and relocation of western pond turtles in consultation with USFWS and CDFG if deemed necessary to avoid impacts, would reduce direct mortality impacts during construction to a less-than-significant level. The

EIR also concluded that restoring the reservoir to its pre-DSOD restricted level of 756 feet would create 11 miles of new aquatic habitat for western pond turtle, more than offsetting the loss of 945 linear feet of aquatic habitat in Calaveras Creek and 0.11-acre of pond habitat.

The proposed left dam abutment excavation area and additional disposal sites would not affect additional western pond turtle habitat beyond that identified for the adopted project. As with the adopted project, implementation of Mitigation Measure 5.4.1a would reduce impacts from direct mortality during construction of the modified project to a less-than-significant level. Therefore, construction of the modified project would not result in any new significant effects on western pond turtle beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.9b: Effect of the modified project on nesting raptors**

As with the adopted project, construction of the modified project could result in the direct mortality of eggs or young raptors, including golden eagle, white tailed kite, American peregrine falcon, prairie falcon, northern harrier, and burrowing owl, if active nests are destroyed or abandoned as a result of disturbance by noise, vehicles, foot traffic, or other mechanisms during construction. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures), and specifically Mitigation Measure 5.4.1a (Preconstruction Measures), which requires preconstruction surveys and nest avoidance or possible relocation of at-risk eggs or young to an appropriate wildlife care facility during construction and reservoir filling.

Under the modified project, impacts on nesting raptors would be substantially the same as described in the EIR for the adopted project. Because tree- and ground-nesting raptors may use habitat in the vicinity of the additional work areas, construction in these areas during the nesting season could incrementally increase impacts compared to the adopted project. However, as with the adopted project, implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures) would reduce this incremental increase in impact to a less-than-significant level. Thus, the modified project would not result in any new significant effects on nesting raptors beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.9c: Effect of the modified project on upland Species of Special Concern, bats, and migratory birds**

The EIR determined that construction of the adopted project could result in the loss of habitat for special-status species and migratory birds, and that construction activities could cause disturbance or remove active nests or bat maternity sites through disturbance from noise, vehicles, foot traffic, or other mechanisms. These impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures), which would minimize construction impacts by requiring preconstruction bird nest and bat roost surveys and ensuring avoidance of active nests and roosts, Mitigation Measure 5.4.2 (Habitat Restoration Measures), which requires restoration of annual grasslands within three years of completion of construction, and Mitigation Measure 5.4.3 (Compensation Measures), which would compensate for temporal, long-term, and permanent impacts on habitat by providing for the preservation and management of habitat for upland Species of Special Concern, bats, and migratory birds in the South Calaveras, San Antonio, Sage Canyon, and/or Goat Rock mitigation areas or other mitigation areas in accordance with resource agency permits.

Construction of the modified project would have substantially the same impacts on upland Species of Special Concern, bats, and migratory birds as described in the EIR for the adopted project. The additional areas disturbed during excavation of the left dam abutment and placement of materials at the proposed disposal sites and the three-year extension of the construction period could increase the direct effect, or cause the loss of, habitat for the upland Species of Special Concern, bats, and migratory birds that use grassland, scrub, upland woodland, riparian forest, and rock outcrop habitats. In addition, the modified project would increase the permanent upland habitat impact area by 16.5 acres. As with the adopted project, these impacts would be reduced to less-than-significant levels with implementation of Mitigation Measures 5.4.1, 5.4.2, and 5.4.3.

Therefore, the modified project would not result in any new significant effects on upland Species of Special Concern, bats, and migratory birds beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.10: Effect of the modified project on special-status plant species**

The EIR determined that construction of the adopted project would have no direct impacts on special-status plant species as no populations of special-status plants are located within the project construction footprint. However, the EIR found that the placement of spoils at Disposal Site 7, which is located within 20-40 feet south and west of a mapped population of the special-status plant species most beautiful jewel-flower. The EIR concluded that this significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures), which would require barrier fencing and information signage to prevent inadvertent impacts on populations of most beautiful jewel-flower near construction activities.

Under the modified project, impacts on special-status plants would be substantially the same as described in the EIR for the adopted project. No special-status plants were identified during botanical surveys within the expanded work areas under the modified project. However, proposed Disposal Site G, which overlies Disposal Site 7, would be located within close proximity to the population of most beautiful jewel-flower near Disposal Site 7, and placement of spoils in this area could therefore result in the accidental loss of most beautiful jewel-flower. In accordance with Mitigation Measure 5.4.1, before the initiation of any ground-disturbing or vegetation-clearing activities at Disposal Site 7 and Disposal Site G, a qualified botanist shall supervise the installation of barrier fencing on the perimeter of the work area within 200 feet of mapped most beautiful jewel-flower populations and Diablo helianthella populations. Signs shall also be installed every 100 feet on the fence line to identify the sensitive area (e.g., "Environmentally Sensitive Area – Keep Out"). No construction-related activities shall be permitted within the limits of the populations. The contractor shall maintain the fencing throughout construction of the CDRP. As with the adopted project, implementation of Mitigation Measure 5.4.1 would ensure that inadvertent impacts on most beautiful jewel-flower during construction of the modified project would be to less than significant. Thus, the modified project would not result in any new significant effects on special-status plant species beyond those identified in the EIR or increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.4.11: Effect of the modified project on sensitive vegetation communities**

As discussed in the EIR, the adopted project would have a significant adverse impact on oak woodland and savannah habitat. Under the modified project, 12 oak trees at Disposal Site A/D, and 2 oak trees at Disposal Site F would be removed, in addition to the tree removal identified in the EIR, resulting in a

total of approximately 0.7 acre of additional impact. This permanent loss of habitat would represent a marginal increase over the permanent loss of 24.3 acres of oak woodlands and savannah for the adopted project as disclosed in the EIR (see Table 5). This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.4.3 (Compensation Measures), which would compensate for habitat losses by creating, restoring, and enhancing oak woodlands and savannah at identified mitigation sites; under the modified project, Mitigation Measure 5.4.3a is adjusted as follows to address the increase of permanent impact areas:

- **Oak Woodlands and Savannah.** Fully compensate for impacts on approximately ~~24.0~~ 25.0 acres of oak woodland and savannah habitat ...

Therefore, the modified project would not result in any new significant effects on sensitive vegetation communities beyond those identified in the EIR or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the modified project and discussed above, would reduce the impacts of the modified project to a less-than-significant level.

**Impact 4.4.12: Effect of the modified project on local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance**

As with the adopted project, the modified project would not conflict with applicable local policies or ordinances protecting biological resources; none of the proposed project modifications would affect the analysis of this impact as presented in the EIR. The modified project would also be located on lands within Alameda and Santa Clara Counties, would use the same roadways as the adopted project, and would not result in the removal of any trees protected under the tree ordinances of Santa Clara or Alameda Counties.

The modified project and associated use of roads would not result in a conflict with strategies, goals, policies, or specific ordinances that are intended to protect unique biological resources and habitats. Through compliance with federal and state regulations protecting biological resources and implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures), 5.4.2 (Habitat Restoration Measures), 5.4.3 (Compensation Measures), and 5.7.1 (Storm Water Pollution Prevention Plan), impacts of the modified project regarding conflicts with county policies and ordinances protecting biological resources would be less than significant.

Thus, the modified project would not result in any new significant effects beyond those identified in the EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.2: Cumulative impacts on vegetation and wildlife**

As described for the EIR for the adopted project, the geographic scope for cumulative impacts of the modified project on vegetation and wildlife resources is the Alameda Creek watershed, and the effects of past and present developments have resulted in the current baseline conditions.

As stated in the EIR, the adopted project in combination with the projects listed in EIR Table 6.1 (including the Little Yosemite project), would remove or diminish the quality of oak woodlands; serpentine grasslands; habitats for special-status plants; upland habitat for California tiger salamander, California red-legged frog, and Alameda whipsnake; riparian vegetation, including habitat for foothill yellow-legged frog, and California red-legged frog; and wetland habitats. The proposed project

modifications could contribute considerably to significant cumulative impacts on upland habitat for California tiger salamander, California red-legged frog, and Alameda whipsnake and on oak habitat; however, as described above, implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures), 5.4.2 (Preconstruction Measures), and 5.4.3 (Compensation Measures), as adjusted for the modified project, would reduce the modified project's direct impacts on these resources. Furthermore, the design of mitigation sites identified in Mitigation Measure 5.4.3 is consistent with conservation principles aimed at minimizing bioregional effects in the implementation of habitat compensation mitigation. As with other WSIP projects listed in EIR Table 6.1, the mitigation sites identified in the EIR, as well as under individual WSIP projects, are contiguous with other areas of relatively undisturbed habitat and, in most cases, are themselves large enough to support most of the species associated with the habitat. The proposed mitigation sites are located within the CCSF-owned Alameda watershed, which is managed consistent with the SFPUC's adopted Alameda WMP. These areas are also located within the larger watershed area that would be managed under the proposed Alameda Watershed Habitat Conservation Plan. The habitat compensation mitigation plan for the adopted and modified project has been closely coordinated with compensation mitigation plans for other WSIP facilities in the same watershed, and together these plans provide for monitoring, long-term management, controls for invasive species, and adaptive management. Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on vegetation and wildlife beyond those identified in the EIR or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## FISHERIES AND AQUATIC HABITAT

The fisheries and aquatic habitat setting for the modified project is the same as the study area described in the EIR for the adopted project. As described below, the proposed modifications to the project would not result in any new significant effects on fish or aquatic habitat beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.5.1: Construction-related effects on fish occupying habitat in Calaveras Creek downstream of the existing dam**

The EIR determined that construction of the adopted project would affect rainbow trout in Calaveras Creek downstream of the existing dam. Project changes included in the modified project would not change the extent or magnitude of construction-related effects on fish in Calaveras Creek downstream of the existing dam that were described in the EIR for the adopted project, because construction activities at this location would be substantially the same as under the adopted project. As with the adopted project, with the implementation of Mitigation Measure 5.5.1 (Native Fish Capture and Relocation), which would require native fish relocation activities to be conducted within the limits of the work area, impacts during construction of the replacement dam on native fish would be less than significant. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.2: Construction-related permanent loss of fish habitat in Calaveras Creek downstream of the existing dam**

The EIR determined that impacts related to a permanent loss of aquatic habitat in Calaveras Creek downstream of the existing dam would be less than significant. The modified project would not change the extent or magnitude of the construction-related permanent loss of habitat in Calaveras Creek downstream of the existing dam, as described for the adopted project. As described in the EIR, the permanent loss of 945 linear feet of marginal-quality aquatic habitat in this relatively small section of creek would not result in a substantial reduction in habitat in the watershed, an adverse effect on special-status fish species, or a substantial change in the fish community of the watershed. As with the adopted project, this impact would be less than significant. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.3: Effect of project on creating barriers to fish movement/migration upstream in Calaveras and Alameda Creeks**

The EIR determined that the adopted project would not affect fish passage on Calaveras Creek at Calaveras Dam as compared to the pre-project condition. Similarly, the proposed project modifications would have no effect on fish passage at Calaveras Dam. The additional excavation at the left dam abutment and the proposed spoils disposal sites under the modified project would not be located in the vicinity of the ACDD and would not affect the timing or implementation of the fish passage improvements that will be constructed at the ACDD under the adopted project. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.4: Temporary effects on fisheries resources related to increases in sediments and turbidity and release of and exposure to contaminants**

The EIR determined that construction of the adopted project could increase sediments and turbidity and temporarily degrade water quality, adversely affecting fish habitat in fish populations in localized areas. By extending the construction period by three years and increasing the construction area, the proposed project modifications could increase temporary sediment and turbidity impacts during construction. As with the adopted project, this significant impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Stormwater Pollution Prevention Plan), which would minimize sediment and contaminant releases to receiving waters. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR for the adopted project or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.5: Effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek**

The additional excavation at the left dam abutment and the proposed spoils disposal sites under the modified project would not affect the reach of Alameda Creek between the ACDD and Calaveras Creek because the additional work areas are not located in the vicinity of this reach of the creek. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR for the



adopted project or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.6: Effects on native fish in Calaveras Creek below Calaveras Dam and in Alameda Creek downstream of the confluence with Calaveras Creek in the primary study area**

Because it would not affect future operations of the reservoir, including implementation of instream flow releases under the adopted project, the modified project would have no effect on flows in Calaveras Creek downstream of the dam and downstream of its confluence with Alameda Creek. The extension of the project construction schedule by approximately three years means that with the project modifications the beneficial effects of the increased flow releases at Calaveras Dam and bypasses at the ACDD that will be implemented under the adopted project will be delayed. Nevertheless, even with a delay in implementation of flow releases and bypasses, the project as modified would have a beneficial effect on native fish in Calaveras Creek below Calaveras Dam and in Alameda Creek downstream of the confluence with Calaveras Creek when compared to the existing condition. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.5.9: Potential for conflict with local plans protecting fisheries and aquatic habitat**

The EIR determined that construction of the adopted project would not result in a conflict with provision of local plans intended to protect biological diversity. As with the adopted project, direct impacts of the project modifications on native fish would be reduced to less than significant with implementation of Mitigation Measure 5.5.1 (Native Fish Capture and Relocation); and water quality impacts on native fish would be reduced to less than significant with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan).

The modified project would delay implementation of flow releases and bypasses proposed under the adopted project to improve conditions for fisheries, but the modified project would still result in beneficial effects compared to the existing condition. These improved conditions would further reduce any potential conflicts with, and would further support local plans protecting fisheries and aquatic habitat. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.3: Cumulative impacts on fisheries and aquatic habitat**

As described in the EIR for the adopted project, the geographic scope of cumulative impacts on fisheries and aquatic habitat is the Alameda Creek watershed. The EIR also describes the geographic scope, along with past, present, and reasonably foreseeable future projects that have resulted/would result in cumulative impacts on fisheries and aquatic habitat in the Alameda Creek watershed. The analysis for the adopted project concluded that the combined effects of past and present projects (including other changes to the creek detailed in the EIR) have resulted in a significant adverse cumulative impact on fisheries (including steelhead) and aquatic habitat in the Alameda Creek watershed; the same analysis would apply to the modified project.

Many of the reasonably foreseeable future projects identified in the EIR would improve future conditions for steelhead by removing fish migration barriers from Alameda Creek and its major tributaries,

enhancing fish and riparian habitats, and reducing sedimentation. Overall, the combined effect of adopted project and other future projects is expected to improve habitat conditions for steelhead and other native fish species compared to current conditions, although even with these future projects, steelhead habitat would remain limited. Furthermore, the adopted project's operational impacts on fisheries and aquatic habitat would be an improvement over existing conditions and thus would not contribute to adverse cumulative long-term impacts. As stated above, the proposed project modifications would not alter the long-term operations of the adopted project or the related benefits to fisheries and aquatic habitat.

With regard to construction-related impacts, the analysis for the adopted project found that given the scale and duration of the construction activities, the adopted project's contribution to construction-related water quality impacts on steelhead and other native fish would be cumulatively considerable; this conclusion would also apply to the modified project. However, like the adopted project, the modified project would be undertaken in accordance with Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which would require implementation of extensive project-specific BMPs during construction, as well as post-construction site restoration and stabilization to control erosion and sedimentation and to prevent the discharge of pollutants into Alameda Creek and other waterways. As a result, implementation of this measure would reduce the modified project's contribution to cumulative construction impacts to a less than cumulatively considerable level (less than significant).

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on fisheries and aquatic habitat beyond those identified in the EIR or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## HYDROLOGY

Existing hydrologic conditions for the modified project are the same as described for the adopted project in the EIR. As determined in the EIR, neither construction nor operation of the adopted project will have a significant impact on hydrology, geomorphology, flooding hazards or groundwater. The only aspect of the modified project that would cause impacts on hydrology that differ from those of the adopted project is the extension of the construction schedule by approximately three years and the need to shut down the dam outlet works for an additional 6 months. None of the other project changes under the modified project would affect the project's effects on hydrology, geomorphology, flooding hazards or groundwater; therefore, other than these construction-related changes, the modified project is not discussed further in this section because it would not affect the hydrology impact analysis in the EIR as described for the adopted project. (Additional temporary impact on perennial stream habitat is addressed above under Impact 4.4.1 above.)

As discussed below, implementation of the modified project would not result in any new significant effects on hydrology beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.6.1: Construction of the replacement dam would temporarily change flow rates in Calaveras and Alameda Creeks downstream of Calaveras Dam**

As described in the EIR, the adopted project will require temporary shutdown of the dam outlet works for two periods during construction (mid-April to mid-November 2011 and 2012 or 2012 and 2013).

During these periods, no flow will be released from the reservoir. These shutdowns could reduce flows in Calaveras and Alameda Creeks compared to existing conditions in similar hydrologic years for the shutdown periods. Prior to the outlet works shutdown, the reservoir would be drawn down to an elevation close to the minimum allowable elevation of 690 feet to provide additional storage capacity for rainfall in that period. The hydrologic record shows that on some occasions, releases from the current dam occurred after mid-April each year. On other occasions, all releases were completed by mid-April. The main controlling factor is the annual rainfall conditions. In most years in the Bay Area, little rainfall is expected after April 15 and until October 15. The potential for rainfall occurring in early autumn before November 15 is greater. However, in late summer and early autumn, the reservoir would typically be at its lowest level. Because capacity would be available to hold rainfall that might occur in early autumn, releases would not typically occur during this period under baseline conditions, so the absence of releases during the shutdown period is not expected to result in a significant change from baseline conditions. Also, because of withdrawals from the reservoir in anticipation of the shutdown, if rainfall occurs during the shutdown period, capacity is expected to be available in the reservoir. In the event of rainfall after mid-April, the existing dam would hold and store all water until mid-November, during which time the level of the reservoir may be slightly higher than has occurred during the baseline period. After the shutdown period is terminated, the water would be withdrawn for delivery to customers or released to Calaveras Creek. Thus, releases between mid-November 2011 and mid-April 2012, as well as between mid-November 2012 and mid-April 2013, or the 2012–2013 and 2013–2014 rainy season, may be slightly higher than those under existing conditions in order to draw down Calaveras Reservoir to the DSOD allowed level of Elevation 705 feet, depending on the rainfall in those years. However, releases are expected to be within the range of both baseline and pre-DSOD restriction releases made from the reservoir. Thus, the EIR determined that any resulting changes in seasonal flow rates would be within the range of past operations and the impact on Calaveras and Alameda Creeks would be less than significant.

Under the modified project, additional excavation of the left dam abutment to address geological hazards would require one additional shutdown period in mid-April to mid-November 2015. The additional shutdown period would be of the same duration and time of year as the shutdown periods identified in the EIR for the adopted project. As with the adopted project, any resulting change in flow in Calaveras and Alameda Creeks would be within the range of past operations. Following completion of construction, the proposed project modifications would have no effect on seasonal flow rates in Calaveras and Alameda Creeks or water levels in the reservoir. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.6.2: Construction of the replacement dam would temporarily increase downstream flooding risk**

The EIR determined that the adopted project might increase the risk of downstream flooding due to the two shutdowns of the dam outlet works. During these periods, the existing reservoir outlets and spillway would not be operational, and there would be no means to safely release water from the reservoir, increasing the risk of dam failure. Given that the shutdowns would occur during the dry season, the likelihood of a large storm filling the reservoir and resulting in a spill from the dam is extremely low. However, to further reduce this risk, the SFPUC proposes to maintain an operational outlet during the rainy season and to lower the reservoir elevation before shutting down the outlet structures to a level that would retain the inflow from a 100-year storm. As such, the EIR concluded that this impact would be less than significant.

The modified project would require one additional dam outlet work shutdown period. Like the two shutdown periods for the adopted project, this additional shutdown would occur during the dry season. As described in the EIR, the SFPUC would maintain an operational outlet during the rainy season and would draw down the reservoir to minimal operating levels. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.6.3: Construction-related activities could affect local groundwater supplies in the vicinity of the dam**

The project modifications would not require any change in dewatering activities needed for construction. For the reasons discussed in the EIR, the effects of dewatering on shallow groundwater would be temporary and localized, and there would be no impacts on groundwater supply. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.4: Cumulative impacts on hydrology**

As described in the EIR for the adopted project, the geographic scope for potential cumulative hydrology impacts consists of the modified project site, the surrounding watershed lands, and Alameda Creek within and downstream of the Sunol Valley.

As a result of past and ongoing projects, the flow and sediment transport regimes of Alameda Creek have been greatly altered from natural conditions, which have substantially affected stream geomorphology and channel-forming mechanisms. These existing conditions, which reflect the results of past and ongoing projects in the watershed, apply to both the adopted project and the modified project.

The EIR describes how some of the future projects listed in EIR Table 6.1 would have long-term effects on flow in the streams of the Alameda Creek watershed. Future projects include Upper Alameda Creek Filter Gallery Project, slurry cutoff walls as part of the SMP-30 Cemex Quarry Expansion, and various pipeline inspection projects. The EIR concludes that the adopted project would not contribute to cumulative impacts on Alameda Creek, because the cumulative projects in combination with the adopted project would have offsetting effects on flows in various reaches of Alameda Creek, or would result in general increases in flows such that no adverse cumulative impacts would occur.

Because the proposed project modifications would have no long-term effects on stream flows, the modified project would not alter the conclusions reached in the EIR. In addition, construction activities required for the modified project in conjunction with the projects listed in EIR Table 6.1 would have no significant cumulative impacts related to stream flows, flooding, or groundwater supplies because the modified project would not alter stream flows outside of the range of past operations, would not contribute to increased risk of flooding, and would not affect groundwater supply.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on hydrology beyond those identified in the EIR, and would not substantially increase the severity of a significant cumulative impact. No new mitigation measures would be required.

**WATER QUALITY**

Existing water quality conditions for the modified project are the same as described in the EIR for the adopted project. Water quality impacts related to the barge haul route option identified in the EIR

(Impact 4.7.3) are not addressed in this addendum because the proposed project modifications would not affect this aspect of the project. As discussed below, implementation of the modified project would not result in any new significant effects on water quality beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.7.1: Impact on water bodies as a result of soil erosion and sediment discharge during construction**

The EIR determined that the adopted project could result in water quality impacts on Calaveras and Alameda Creeks as well as Calaveras Reservoir due to erosion and sediment discharges during construction. The proposed project modifications would extend the construction period by three years and increase the construction area compared to the adopted project. As such, construction of the modified project could increase in water quality impacts on Calaveras and Alameda Creeks as well as Calaveras Reservoir due to erosion and sediment discharges. As with the adopted project, this significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which includes site-specific Best Management Practices (BMPs) to avoid or minimize erosion and the transport of sediments to water bodies. Therefore, the modified project would not result in any new significant effects on water quality associated with soil erosion and sediment discharge during construction beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.7.2: Impact on water bodies as a result of a hazardous materials release, naturally occurring asbestos or metals release, or solid waste discharge during construction**

The EIR determined that the adopted project could result in detrimental impacts on water quality due to releases of hazardous materials or discharges of other contaminants during construction. Construction activities would involve the use of major construction equipment and vehicles, which have the potential to leak fuel and lubricants or other hazardous materials and result in the discharge of such materials into water bodies. By extending the duration of construction by approximately three years and increasing the construction area, the modified project would increase the potential for such discharges to occur compared to the adopted project. As with the adopted project, this significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan).

The proposed additional excavation at the left dam abutment landslide would occur primarily within Temblor Sandstone, which does not contain NOA or elevated levels of naturally-occurring metals. However, a small amount of the proposed excavation would occur on the south side of the left abutment slope, which contains potentially NOA-bearing serpentinite. As a result, approximately 60 cubic yards of additional potentially NOA-containing material would be disposed in Disposal Site A/D, which overlaps with Disposal Site 3. This would represent an insubstantial increase in the 4 million cubic yards of potentially NOA-containing material that would be excavated and handled under the adopted project. Consistent with the adopted project, the additional 60 cubic yards of NOA-containing material would be placed at or above 760 feet (4 feet above the proposed normal maximum reservoir surface elevation of 756 feet) and capped with four feet of Temblor Sandstone to prevent NOA from coming into contact with the reservoir surface water. Implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which requires that the disposal sites be designed and constructed to minimize the potential for an accidental release of NOA and other contaminants into the reservoir, would reduce any water quality

impacts related to the excavation, handling, and disposal of this additional NOA-containing material under the modified project to a less than significant level. Therefore, the modified project would not change the effects of the adopted project on water quality due to disturbance of soils containing these materials.

The EIR also determined that in addition to chemical contaminants, construction debris, trash, litter, and waste (e.g., packing material, tape, plastic bags, paper, cans, bottles, cigarette butts, containers for fuels and solvents, and assorted loose debris) could also enter the water during construction of the adopted project, diminishing water quality in Calaveras Reservoir, Calaveras Creek, and Alameda Creek. Some discarded waste materials (e.g., discarded containers for fuels and solvents) might be toxic or hazardous. Other construction debris, waste, and litter, while not specifically toxic, would diminish aquatic habitat quality, pose life-threatening hazards to or injure wildlife, and degrade water quality and stream aesthetics. To prevent potential water quality impacts from improper disposal of construction debris and trash, Mitigation Measure 5.7.1 requires proper management and disposal of construction materials, debris, and trash and stipulates removal from the site of any such materials that remain at the conclusion of construction. The EIR concluded that implementation of these requirements would ensure that the potential water quality impacts from construction debris and trash are less than significant.

By extending the construction period by three years, the proposed project modifications would increase the potential for discharges of construction debris, trash, litter, and waste into surface water bodies. As with the adopted project, water quality impacts from solid waste generated during construction of the modified project would be less than significant with implementation of Mitigation Measure 5.7.1.

Therefore, the modified project would not result in any new significant effects on water bodies as the result of a hazardous materials release, NOA or metals release, or solid waste discharge during construction, beyond those impacts identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.7.4: Impact on reservoir water quality during and following inundation due to contact with borrow materials containing NOA, metals, or contaminants**

The EIR determined that the adopted project could have a significant impact on water quality due to the release of materials potentially containing NOA, metals, or contaminants into the reservoir during inundation of the existing and replacement dam, disposal sites, and haul roads. As discussed above, approximately 60 cubic yards of additional potentially NOA-containing material would be disposed of in Disposal Site A/D, which overlaps with Disposal Site 3, under the modified project. This would represent an insubstantial increase in the 4 million cubic yards of potentially NOA-containing material that would be excavated and handled under the adopted project. Consistent with the adopted project, the additional 60 cubic yards of NOA-containing material would be placed at or above 760 feet (4 feet above the proposed normal maximum reservoir surface elevation of 756 feet) and capped with four feet of Temblor Sandstone to prevent NOA from coming into contact with the reservoir surface water. As with the adopted project, implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which requires that the disposal sites be designed and constructed to minimize the potential for an accidental release of NOA and other contaminants into the reservoir and Mitigation Measure 5.9.2d (Excavation Materials Management Plan), which requires the SFPUC to segregate spoils by geologic type for placement in disposal sites, would reduce any water quality impacts related to the excavation, handling, and disposal of this additional NOA-containing material under the modified project to a less-than-significant level.

Because the number of truck trips on the West Haul Road would not increase compared to the adopted project, there would not be an increase in potential contaminant leakage or spills along this road; therefore, this element of the modified project would not increase the impacts on reservoir water quality during and following inundation due to road contaminants such as motor oil. However, under the modified project, a portion of Disposal Site F and all of Disposal Site I would be submerged when the reservoir is refilled. The placement of 1.46 million cubic yards of additional material at these disposal sites below the future inundation zone of the reservoir could increase the potential for releases of oil and grease and other contaminants from leaks or spills from heavy machinery used to place material within these disposal sites. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.7.1 (Storm Water Pollution Prevention Plan), which requires that the disposal sites be designed and constructed to minimize the potential for an accidental release of contaminants into the reservoir as well as inspection of project roadways and staging areas that would be inundated at the end of construction to identify visible staining from spills or leaks of oil, grease, fuel, or other contaminants.

Therefore, the modified project would not result in any new significant effects on reservoir water quality during or following inundation due to contact with borrow materials containing NOA, metals, or contaminants beyond those impacts identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.7.7: Changes in groundwater quality related to construction and operations**

The EIR determined that operations of the adopted project would not substantially affect groundwater quality, but that construction-related runoff and associated sediment and contaminants could degrade groundwater quality if these constituents infiltrated into the groundwater. By extending the construction period by three years and expanding the construction area, the modified project could increase impacts on groundwater quality from construction-related runoff. As with the adopted project, the potential for a significant impact under the modified project would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which contains BMPs to reduce effects on groundwater quality due to the release of hazardous materials during construction. Therefore, the modified project would not result in any new significant effects on groundwater quality beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.5: Cumulative impacts on water quality**

As described in the EIR for the adopted project, the geographic scope for potential cumulative water quality impacts consists of the modified project site and the surrounding watershed lands. The modified project would not affect long-term water quality in the Alameda Creek watershed as discussed above. However, the modified project could cause discharges of construction-related substances and sediment.

The ongoing and future projects summarized in EIR Table 6.1 that include ground disturbance and/or discharge of water containing pollutants, could cause impacts on surface and groundwater quality, including water quality within local creeks. The impacts on surface and groundwater quality associated with the modified project and the cumulative projects could be cumulatively significant. Given the scale and duration of the project construction activities, the modified project's contribution to construction-related cumulative impacts on water quality would be cumulatively considerable.

As discussed above, the modified project would be undertaken in accordance with a project-specific SWPPP as reviewed by the RWQCB. As identified in Mitigation Measure 5.7.1, BMPs would be implemented during construction to minimize erosion and sediment transport, accidental spills, solid waste discharges, dewatering activities, and reservoir water contact with NOA, metals, and other contaminants. Mitigation Measure 5.7.1 requires frequent inspection and maintenance of the BMPs throughout project construction to ensure their effectiveness, and requires the SFPUC or its contractors to monitor and report on the effectiveness of the required BMPs. In addition, implementation of Mitigation Measure 5.9.2d (Excavation Materials Management Plan), which requires the SFPUC to segregate spoils by geologic type for placement in disposal sites, would reduce any potential water quality impacts related to the excavation, handling, and disposal of this additional NOA-containing material under the modified project to a less-than-significant level. As with the adopted project, implementation of Mitigation Measures 5.7.1 and 5.9.2d would reduce the modified project's contribution to cumulative impacts on water quality to a less-than-significant level. Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on water quality beyond those identified for the adopted project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

#### **GEOLOGY, SOILS, AND SEISMICITY**

Existing geology, soils, and seismicity conditions for the modified project are substantially the same as those described for the adopted project. However, the objective of the proposed project modifications is to abate an additional geological hazard not identified in the EIR. As described below, implementation of the modified project would not result in any new significant effects beyond those identified for the adopted project or an increase in the severity of a significant impact on geology, soils, and seismicity, and no new mitigation measures would be required.

#### **Impact 4.8.1: Landslide activation as a result of construction activities, resulting in structural damage and injuries**

As discussed in the EIR, impacts related to slope instability from existing landslides at the right dam abutment are addressed through the design of the replacement dam. The right dam abutment excavation would be completed in order to stabilize the dam foundation in an area where several landslides have occurred. During construction of the adopted project, the contractor discovered an additional landslide hazard in the area of the left dam abutment and spillway. The primary objective of the proposed project modifications is to partially remove this newly discovered landslide and stabilize the landslide remnant left in place in the slope above the spillway and left dam abutment. Therefore, as with the adopted project, construction of the modified project would not result in landslide hazards because site-specific geotechnical investigations related to this issue have been completed and appropriate design to repair identified instability issues have been incorporated in the design of the modified project.<sup>13</sup> Specifically, after the landslide was discovered in June 2012, the SFPUC implemented an extensive supplemental geotechnical investigation program including 25 additional core borings, a large-diameter bucket auger boring and numerous geologic test pits on the left side of the valley to investigate this landslide feature

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<sup>13</sup> Calaveras Dam Replacement Project, Evaluation of Left Abutment Slope Excavation, Revised Draft Technical Memorandum, URS Corporation, November 2012.



and other smaller geologic features uncovered during the excavation. These additional data were used to develop an updated geologic model for the left abutment area, which, in turn, was used as the basis for updated slope stability analyses. Based on these analyses, the SFPUC re-designed the left abutment spillway excavation to a 2:1 overall slope. Drilled piers may be added at the toe of the landslide remnant to provide additional resistance against excessive seismic deformation (if needed based on actual conditions encountered during excavation). In addition, rock slope netting, shotcrete and rock bolts will be used to provide surficial rock slope support as needed. Therefore, the modified project would not result in any new significant effects related to slope stability or landslides beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.2: Impacts of excavation, placement of fill, and other construction activities on soils with severe erosion and slope instability hazards**

The EIR determined that construction of the adopted project would have significant soil erosion and slope instability hazard impacts due to wind and stormwater runoff during excavation and preparation of the dam foundation area and grading of access roads and disposal sites. Like the adopted project, the modified project would include construction activities such as grading, excavation, soil stockpiling, and transport that could cause soil loss and erosion as a result of wind and stormwater runoff. Thus, the modified project would result in an increase in impacts on soils with severe erosion and slope instability hazards compared to the adopted project due the incremental increase in the disturbance area. As with the adopted project, the SFPUC's standard construction measures and Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce these impacts to a less-than-significant level. Therefore, the modified project would not result in any new significant effects associated with soil erosion and slope instability hazards beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.3: Impacts on slopes at the disposal sites due to fill settlement, slippage, and failure under seismic loading**

The EIR evaluated the impacts from the disposal of 3.8 million cubic yards of unsuitable material at the four disposal sites resulting from settlement, slip out of steep embankments, or failure under seismic loading. The EIR concluded that: (1) because Disposal Site 2 would be buttressed by the old and new dams, would be submerged beneath the reservoir, and would have a rockfill cover, there would be no slope stability hazards associated with this site; (2) the SFPUC has incorporated the recommendations from site-specific geotechnical evaluations into the design of Disposal Sites 3 and 7, so slope failure hazards at these sites would be less than significant; and (3) if reserve Disposal Site 5 is used, a site-specific geotechnical evaluation would be conducted in accordance with Mitigation Measure 5.8.3 to reduce slope stability hazards associated with the use of this disposal site to a less-than-significant level.

Under the modified project, the SFPUC proposes to dispose of approximately an additional 3 million cubic yards of spoil material from the excavation of the left dam abutment in five new disposal sites. As is the case for the adopted project, the additional disposal area fills proposed under the modified project may be subject to settlement, differential settlement, erosion, and seismic induced failure. Benches, revegetation and surface drainage control measures would control erosion of the completed disposal sites and such a failure at any of the disposal sites would pose minimal hazards to humans as no structures would be built in these areas. However, a failure could result in other impacts on the environment such

as effects on sensitive habitats, fish and aquatic environments, areas for which restoration is planned, and discharges of sediment into the reservoir. If not properly designed, the disposal site fills could result in significant impacts on the environment due to settlement, slip out of steep embankments, or failure under seismic loading.

Disposal Site A/D has an estimated capacity of 1.18 million cubic yards and partially overlies the northeastern portion of Disposal Site 3 that extends up the southwestern flank of Observation Hill. Disposal Site A/D would extend at a maximum slope of 3:1 to elevation 1,140 feet and would be constructed across the conditionally active Gully Fault, which also underlies the eastern portion of Disposal Site 3. The spoils would be placed on the southwest facing slope of Disposal Site A/D and be up to 100 feet thick. The ridgeline of Observation Hill would be similar to the adopted project, except to the east, where it would be lowered by the proposed left abutment excavation. Disposal Site A/D and Disposal Site 3 are underlain by Franciscan mélange and serpentinite, Temblor Sandstone, and Berryessa Formation.

Disposal Site F has an estimated capacity of 450,000 cubic yards and would be located along the eastern shore of Calaveras Reservoir between the existing dam extending southward to Disposal Site 7. All but 0.1 acre would be located below the normal (future) maximum water surface elevation of 756 feet when the reservoir is refilled. The northern and deepest part of the disposal fill (fill thickness of 80 feet) would overlie up to 100 feet of original dam material that slid into the reservoir area in 1918. The southern portion of Disposal Site F would overlie Franciscan mélange. There are no known faults underlying Disposal Site F.

Disposal Site G could accommodate approximately 400,000 cubic yards of material on an area of approximately 12.9 acres, all but 0.5 acres of which overlies Disposal Site 7, which is located on a terrace on the east side of the reservoir at Corral Point. Additional capacity would be provided at Disposal Site G by extending the fill about 10 feet above the limits of Disposal Site 7. As described in the EIR for the adopted project, spoils at Disposal Site 7 would be placed across the inactive Corral Point fault in a shallow valley between a small hill on the west side and a taller hill on the east side. Disposal Sites 7 and G are underlain by Franciscan serpentinite and greenstone and avoid the landslides mapped to the north and south.

Disposal Site H has an estimated capacity of 200,000 cubic yards and fully overlies the westerly portion of Disposal Site 3 in the drainage west of the existing dam and would be located close to the active Calaveras Fault. Thus, a fault rupture hazard exists at Disposal Site H as it does for Disposal Site 3. The final surface of Disposal Site H would be a graded slope that ascends from Elevation 740 feet on the west and rises to Elevation 950 feet. The final slope would be predominantly graded at an inclination of approximately 3:1. This slope inclination, length and height, and location adjacent to the reservoir would be described in a grading plan that specifies: site preparation, compaction, subsurface and surface drainage measures, final preparation of the finished surface, and a landscape or revegetation plan to control slope stability and erosion.

Disposal Site I has an estimated capacity of 1.01 million cubic yards. Disposal Site I would be located south and east of the eastern half of Disposal Site 3 within the reservoir. The west portion of the site would cover the dike at the base of Disposal Site 3 and extend southeast into the reservoir. The fill would have a maximum final grade of the normal maximum water surface elevation of 756 feet and would thus be below water when the reservoir is full. The western portion of Disposal Site I is underlain by up to 42 feet of alluvium overlying Franciscan shale. The eastern portion of Disposal Site I is underlain by up to 6

feet of colluvium overlying Franciscan serpentinite. A fault rupture hazard exists at the western portion of Disposal Site I as it overlies the active Calaveras Fault. The eastern portion of Disposal Site I overlies the inactive Spillway Fault.

A geotechnical analysis was conducted for Disposal Sites 3 and 7 and concluded that the proposed fill slopes at these sites would be geotechnically stable during and following construction if the spoil materials are lightly compacted, natural seeps are intercepted by gravel drains, existing landslides are removed prior to fill placement, and the rockfill dike buttress is placed at the reservoir margin for Disposal Site 3<sup>14</sup>. The geotechnical analyses for Disposal Sites 3 and 7 and the conclusions from those analyses are applicable to Disposal Sites A/D, G and H because these disposal sites would have the same slopes and would be constructed of the same materials and methods that were specified for Disposal Sites 3 and 7. Therefore, the SFPUC is incorporating the recommendations from the geotechnical analysis conducted for Disposal Sites 3 and 7 into the final design plans for Disposal Sites A/D, G and H. Also, sub-drainage would be used to intercept springs and convey seepage away from the disposal sites, as was used for Disposal Sites 3 and 7. In addition, a 4-foot-thick Temblor Sandstone cap would be placed over the final surface to prevent exposure of any NOA-containing material due to fault rupture and displacement of the fill along the Corral Point, Calaveras, and Gully Faults.

Results from geotechnical analyses of Disposal Sites F and I indicate both sites would be geotechnically stable following construction if, at the time of construction, Temblor Sandstone rock materials are placed in the portions of the disposal sites that are below water. During construction there could be some local instability of the toe of the slopes for both disposal sites. There would be no significant effect on water quality due to the local instability during construction because the disposal sites would be isolated from the reservoir by turbidity barriers.

Disposal Site F overlies liquefiable material that was part of the original dam that is anticipated to deform significantly during the design earthquake<sup>15</sup>. The alluvial foundation under the west portion of Disposal Site I has weak clayey layers and discontinuous liquefiable sandy layers that would lead to significant deformation of the disposal site during strong seismic shaking. As such, both Disposal Sites F and I are anticipated to undergo significant deformation during large earthquakes. The potential impact of such deformations on the intake adits and drain was previously evaluated and mitigated by inclusion of rockfill berms in the design to protect the adits<sup>16</sup>. The locations of these disposal sites have been chosen to ensure that this deformation, which would be characterized by lateral spreading and subsidence of the disposal site fills, would not result in fill materials coming into contact with the adit intakes.

Disposal Site 2 is between the new and existing dams and would receive an additional 400,000 cubic yards of spoils. As with the adopted project, the fill at this site would be buttressed by the old and new

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<sup>14</sup> Geotechnical Evaluation of Disposal Sites 3 and 7, Calaveras Dam Replacement Project, URS Corporation, January 7, 2008.

<sup>15</sup> Calaveras Dam Replacement Project, Embankment Seismic Deformation (Task C2), Revised Draft Technical Memorandum Addendum, URS Corporation, July 2007.

<sup>16</sup> Calaveras Dam Replacement Project, Evaluation of Effect of Seismic-Induced Deformation of Existing Dam on Intake Adits and Drain (Task C2), Revised URS Corporation, November 2007.

dams, would be submerged beneath the reservoir, and would have a rockfill cover. Consequently, there are no hazards related to stability of the fill and slopes or erosion potential.

Therefore, the modified project would not result in new significant effects due to fill settlement, slippage, or seismically induced ground failure beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.4: Seismic hazards at the replacement dam**

As with the adopted project, the replacement dam under the modified project would be designed to remain stable and functional following a major earthquake on the Calaveras fault or regional earthquakes generated on other faults (e.g., the San Andreas fault and Hayward fault). The proposed left dam abutment excavation modifications would further decrease the potential for seismic hazards at the replacement dam because it would have a flatter slope than for the adopted project, thus increasing slope stability. Therefore, the modified project would not result in any new significant effects related to seismic hazards beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.5: Hazards of seismically induced ground failure, including liquefaction, lateral spreading, and settlement at disposal fill sites**

The EIR determined that hazards related to seismically induced ground failure under the adopted project would be limited to Disposal Site 5 because the replacement dam and proposed disposal fills would not be subject to liquefaction, and site-specific geotechnical recommendations have been incorporated into the design of the other disposal sites. Since a geotechnical evaluation has not been undertaken for Disposal Site 5, the EIR assumes that settlement and seismically induced subsidence could occur. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.8.3 (Geotechnical Evaluation for Disposal Site Stabilization); this measure describes the site-specific geotechnical evaluation necessary to support the civil engineering design to ensure stability of Disposal Site 5 if this site is used.

Under the modified project, the SFPUC proposes to dispose an additional 3 million cubic yards of spoil material from the excavation of the left dam abutment in five new disposal sites.

As discussed above, geotechnical analysis conducted for Disposal Sites 3 and 7 are applicable to Disposal Sites A/D, G, and H. Those analyses concluded that the proposed fill slopes at these sites would be geotechnically stable if the spoil materials are lightly compacted, natural seeps are intercepted by gravel drains, existing landslides are removed prior to fill placement, and the rockfill dike buttress is placed at the reservoir margin for Disposal Site 3<sup>17</sup>. The SFPUC is incorporating these recommendations into the final design plans for Disposal Sites A/D, G and H, and no structures are proposed to be located on or adjacent to the disposal site fills. As such, impacts from seismically induced settlement or subsidence of fill placed at Disposal Sites A/D, G and H would be less than significant.

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<sup>17</sup> Geotechnical Evaluation of Disposal Sites 3 and 7, Calaveras Dam Replacement Project, URS Corporation, January 7, 2008.

As also discussed above, both Disposal Site F, which overlies liquefiable material from the original dam failure in 1918, and Disposal Site I, which overlies weak alluvial clays and discontinuous liquefiable sand layers, are anticipated to undergo significant deformation during large earthquakes. The deformations would not impact the intake adits and drain and no structures are proposed to be located on or adjacent to the disposal site fills. As such, impacts from seismically induced lateral spreading and subsidence of fill placed at Disposal Sites F and I would not result in new significant impacts.

Therefore, the proposed additional disposal sites would not result in new significant effects due to liquefaction, lateral spreading, or settlement beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.6: Impacts on project structures and buried utilities from expansive or corrosive soils**

As with the adopted project, construction of the modified project would comply with standard design and construction practices for the determination of the corrosive characteristic and expansion potential of soils employed during design for dams, steel pipelines and concrete facilities, as well as implement protection measures such as the use of steel with coatings and corrosion-resistant concrete. Therefore, the modified project would not result in any new significant effects related to expansive or corrosive soils beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.8.8: Alteration of the existing topography and geologic features of the site**

The EIR determined that although the excavation and grading at the borrow areas and disposal sites required for the adopted project would alter existing topography, no unique geologic or topographic features would be altered or destroyed. The EIR therefore concluded that the adopted project would have a less-than-significant impact on the existing topography and geological features of the site.

The additional excavation of Observation Hill for the spillway proposed under the modified project would create a backcut slope that is flatter (30 degrees) than the adopted project slope of 42 degrees. The revised slope would shift the high point to the northwest from its current location and reduce the peak of Observation Hill by about 50 feet from Elevation 1,190 feet to 1,150 feet. Similar to the adopted project, the backcut slope would be a uniform planar slope unlike the existing natural slopes.

Disposal Site A/D is an extension of Disposal Site 3, which create a side hill fill partly filling a small south-draining valley located west of the existing dam. Disposal Site A/D would extend the fill area from the top of Disposal Site 3 at the dam access road to near the new peak of Observation Hill at Elevation 1,140 feet. The fill area would measure approximately 1,800 feet long parallel to the valley and 300 to 900 feet wide. The final surface of the fill would slope southwest at an inclination varying between 16 to 20 degrees comparable to the existing natural slope. The existing side slopes of Observation Hill would be filled to depths of between 10 to 100 feet effectively shifting the slope 30 to 200 feet to the southwest.

Disposal Site H is also an extension of Disposal Site 3, which creates a side hill fill partly filling a small south-draining valley located west of the existing dam. Disposal Site H would widen the Disposal Site 3 fill in the valley bottom by up to 50 feet and extends from the level of the relocated drainage at the base of Disposal Site 3 up to the top of Disposal Site 3 at Elevation 950 feet. The fill area would measure approximately 1,500 feet long parallel to the valley and 700 feet wide. The final surface of the fill would slope southwest at an inclination of 20 degrees comparable to the existing natural slope. The side slopes

of Disposal Site 3 would be filled to depths of between 5 to 20 feet effectively shifting the slope 10 to 50 feet to the southwest.

Disposal Site I is also an extension of Disposal Site 3 towards the east. The disposal site would form two broad flat terrace level at Elevation 756 feet; one about 700 feet long and 200 to 400 feet wide and the other about 500 feet long by 50 to 150 feet wide. The broad terrace areas would be divided by a 30-foot-wide and up to 35-foot-deep outlet channel through the central portion of the site to provide drainage into the reservoir. The disposal site would slope down at 20 degrees to a second terrace that gently slopes to the southwest from elevation 730 feet to elevation 705 feet. This terrace would be between 500 to 900 feet wide and about 200 feet wide. The disposal site would then slope down to the reservoir floor at a slope of 30 degrees to elevation 640 feet. When the reservoir is full (elevation 756 feet) the disposal site would not be visible. When the reservoir level is lower than 756 feet, the broad float terrace areas would become visible.

Disposal Site F would be located on the east edge of the reservoir between the existing dam and the Disposal Site 7. The disposal site fill would form a terrace at elevation 730 feet that would be nearly 2,800 feet long and between 50 and 150 feet wide. The disposal site would slope down at 20 degrees to elevation 705 feet and then slope down to the reservoir floor at a slope of 30 degrees to as low as elevation 620 feet. Disposal Site F would not be visible when the reservoir is filled to elevations greater than 730 feet. At reservoir elevations lower than 730 feet the terrace area would become visible.

Disposal Site G is an extension of Disposal Site 7 located on the east side of the reservoir at Corral Point that fills a small valley and extends north as a side hill fill. Disposal Site G extends from the top of Disposal Site G at Elevation 870 to a new top elevation of 940 feet. The upper surface of the fill would be a level terrace measuring about 200 feet wide and 600 feet long. The northwest-facing fill slope would descend at an inclination of 20 degrees, comparable to the natural slopes in the area. The level terrace created at Disposal Site G would be flatter than the natural contours of hills in the area.

As with the adopted project, the additional topographic changes under the modified project, while large in area would appear similar to the existing topography and would function much the same as at present, and no unique geologic or topographic feature would be altered or destroyed. Therefore, the modified project would not result in any new significant effects related to altering the existing topography and geologic features of the site beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 6.2.3.6: Cumulative impacts on geology, soils, and seismicity**

As described in the EIR for the adopted project, the geographic scope for cumulative geologic and seismic impacts is the area surrounding Calaveras Dam and Reservoir. Past projects, including historical and current SFPUC regional water system facilities and mining operations, have modified the topographic and geologic landscape in the vicinity of the project site.

As noted for the adopted project, none of the projects listed in EIR Table 6.1 would contribute to any geological hazards at the project site, including landslides, squeezing ground within the outlet tunnel and adits, fault rupture, ground shaking, liquefaction, or adverse soil conditions. The EIR determined that neither the adopted project, nor the projects listed on EIR Table 6.1 would contribute to a significant cumulative impact resulting from substantial changes to a unique topographic or geological feature. As discussed above, the modified project would not result in a substantial change in the topography of

unique geologic or physical features; thus, as with the adopted project, there would be no cumulative impact.

The potential soil loss associated with the modified project and the cumulative projects would be cumulatively significant, and like the adopted project, the modified project's contribution would be cumulatively considerable. As described above, implementation of soil erosion protection measures as part of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce this impact to a less-than-significant level. Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts related to soil loss beyond those identified for the adopted project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## HAZARDS AND HAZARDOUS MATERIALS

Existing hazards and hazardous materials conditions for the modified project are the same as described in the EIR for the adopted project. As discussed below, implementation of the modified project would not result in any new significant effects related to hazards and hazardous materials beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.9.1: Release of hazardous materials in soil and groundwater during construction**

The EIR determined that the potential to encounter unknown hazardous materials in the soil and groundwater during construction of the project would be low, with the possible exception of excavation at Borrow Area E. Excavation within Borrow Area E could encounter groundwater and could affect the movement of the identified groundwater plume at the former Calaveras Test Site. The additional excavation at the left dam abutment and additional materials handling and disposal would not occur in the vicinity of Borrow Area E, and would be located on watershed lands in areas with a low potential to encounter hazardous materials in the soil or groundwater. Therefore, the modified project would not result in any new significant effects related to the release of hazardous materials in soil or groundwater beyond those identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.9.2: Release of airborne NOA and naturally occurring metals from excavation, hauling, blasting, tunneling, placement, and on-site disposal of Franciscan Complex or serpentinite mélange**

The EIR determined that construction activities in areas containing NOA and metals could create a significant hazard to the public, construction personnel and SFPUC employees. The proposed additional excavation at the left dam abutment landslide would occur primarily within Temblor Sandstone, which does not contain NOA or elevated levels of naturally-occurring metals. However, a small amount of the proposed excavation would occur on the south side of the left abutment slope, which contains NOA-bearing serpentinite. As a result, approximately 60 cubic yards of additional NOA-containing material would be excavated, handled and disposed. This would represent an insubstantial increase in the 4 million cubic yards of potentially NOA-containing material that would be excavated and handled under the adopted project. These hazards are addressed in the EIR under Mitigation Measures 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program), 5.9.2b (Construction Worker Protection), and 5.9.2c (Watershed Keeper's Residence), which require enhanced monitoring and

protective measures in addition to compliance with all applicable Bay Area Air Quality Management District and Cal-OSHA regulatory requirements. These mitigation measures and regulatory requirements would reduce any potential hazards related to the excavation, handling, and disposal of this additional NOA-containing material under the modified project to a less-than-significant level.

Because the modified project would be subject to the same mitigation measures and regulatory requirements as the adopted project, implementation would not result in any new significant effects related to the release of airborne NOA or naturally occurring metals beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.3: Potential for an explosion due to gassy conditions during excavation and tunneling**

The EIR determined that construction of the adopted project would entail excavation and tunneling activities for the outlet shaft and adits that could result in gassy conditions. However, the SFPUC would comply with the requirements of the California Tunnel Safety Orders and any additional requirements of the Department of Industrial Safety if the tunnels were to be classified as potentially gassy or gassy. None of the proposed project modifications would affect the excavation and tunneling activities with potential to result in gassy conditions. Therefore, the modified project would not result in any new significant effects related to an explosion due to gassy conditions beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.4: Increased risk of fires in an area of high fire danger**

The EIR determined that the use of construction equipment and temporary on-site storage of diesel fuel under the adopted project could pose a wildfire risk with the potential to injure workers, the public, and wildlife. However, the SFPUC would comply with the statutory requirements of the California Public Resources Code and with SFPUC Alameda Watershed Management Plan (WMP) Action fir1 (Fire Pre-Suppression). While the modifications to the project would involve an incremental increase in the extent of the construction area and would extend the construction period by approximately three years, the risk of wildfires and the means to reduce that risk would remain similar under the modified project. Therefore, the modified project would not result in any new significant effects due to risk of wildfires during construction beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.5: Release of hazardous building materials from demolition of existing structures**

The adopted project would require demolition of the warehouse/compressor building, potassium permanganate building, and intake tower. Compliance with well-established regulatory requirements for asbestos abatement in structures and with Cal/OSHA's Lead in Construction Standard would reduce impacts related to disturbance of asbestos or lead-based paint to less-than-significant levels, but impacts related to the disposal of electrical equipment containing polychlorinated biphenyls (PCBs) would be significant. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.9.5 (Hazardous Materials in Structures to be Demolished), which requires legal disposal of electrical equipment containing PCBs as well as fluorescent light tubes and ballasts. None of the proposed project modifications would involve demolition of existing structures, so this impact would not apply. Therefore, the modified project would not result in any new significant effects related to the



release of hazardous materials from demolition of existing structures beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.6: Release of fuel and other hazardous materials to the environment, including Calaveras Reservoir**

The EIR determined that construction of the adopted project could cause a release of hazardous materials, including gasoline and diesel fuel, other types of chemicals used for vehicle maintenance (oils, battery fluids), and chemicals used or stored in appurtenant buildings (paints, solvents, disinfectants, pesticides, and cleaners). The modified project would involve an incremental increase in the extent of the construction area and would extend the construction period by approximately three years. As with the adopted project, the potential for release of fuel and other hazardous materials to the environment during construction of the modified project would be a significant impact. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan), which requires preparation and implementation of a SWPPP, as required by the RWQCB; the SWPPP would specify handling, storage, and spill response requirements for hazardous materials used during construction. Therefore, the modified project would not result in any new significant effects related to a release of hazardous materials to the environment beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.7: Fire and safety hazards from use of explosives during construction**

As discussed in the EIR, construction of the adopted project would involve the use of explosives. Such use would be regulated by Alameda County and would be subject to the regulatory requirements contained in Title 8 of the California Code of Regulations, which is implemented by Cal/OSHA. As indicated in the EIR, compliance with these regulatory requirements would ensure that impacts of the adopted project related to fire and safety hazards from use of explosives are less than significant, and no mitigation would be required.

The additional excavation of the left dam abutment proposed under the modified project would require additional blasting beyond that described in the EIR for the adopted project. As with the adopted project, compliance with regulatory requirements would ensure that impacts of the modified project related to fire and safety hazards from use of explosives are less than significant, and no mitigation would be required. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.9.8: Effect of raising the reservoir level following construction on groundwater plume migration or natural attenuation of trichloroethene in the groundwater at the Calaveras Test Site or water quality in Calaveras Reservoir**

As discussed in the EIR, the adopted project would restore reservoir levels, which would contribute to a decrease in trichloroethene concentrations in the groundwater. In addition, the EIR concluded the increase of reservoir water levels would likely result in a flatter groundwater gradient than current conditions, and would therefore slow groundwater flow and contaminant migration rates, thus reducing risks to water quality in Calaveras Reservoir. None of the proposed project modifications would alter the

raising of the reservoir level, so the EIR impact analysis and conclusions would not change with implementation of the modified project. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 6.2.3.7: Cumulative impacts of hazards and hazardous materials**

As described in the EIR for the adopted project, the geographic scope for cumulative impacts on hazards and hazardous materials includes the lands surrounding the reservoir, including the Calaveras Road corridor, and the Sunol Valley region.

The modified project would not contribute to cumulative impacts related to the release of contaminants such as petroleum hydrocarbons and pesticides because the areas proposed for excavation under the modified project have not been identified in the EIR as sites where contamination has occurred. In addition, due to the site-specific nature of this type of hazardous materials impact, only projects located at or adjacent to the project site that cause a release of such contaminants to the surface and subsurface would potentially result in a cumulative impact related to hazardous materials. None of the projects listed in EIR Table 6.1 would be constructed at or directly adjacent to the adopted project or modified project sites, so no cumulative impact associated with the release of contaminants would occur.

The EIR determined that the adopted project could contribute to cumulative impacts associated with the release of NOA and metals during construction. With two possible exceptions, most projects listed in EIR Table 6.1 are located at sufficient distances from the Calaveras Dam site such that no cumulative effects of airborne NOA would result. The two exceptions are the Geary Road Bridge and the Little Yosemite projects. Background levels of airborne NOA and metals, in combination with releases resulting from construction of the adopted project and the Little Yosemite and Geary Road Bridge projects, would result in an adverse cumulative impact. However, implementation of Mitigation Measure 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program) would reduce the adopted project's contribution to a less-than-significant level; this measure would require that the SFPUC comply with the Asbestos Airborne Toxics Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations, and implement dust control and corrective actions (as needed) to ensure that visible dust emissions would not cross the work area boundaries and that project-related emissions of asbestos and naturally occurring metals would not result in an excess cancer risk.

The approximately 60 cubic yards of additional NOA-containing material that would be handled and disposed of under the modified project would represent an insubstantial increase in the 4 million cubic yards of potentially NOA-containing material that would be excavated and handled under the adopted project. As such, the modified project's contribution to any cumulative impact associated with airborne NOA and metals would not be cumulatively considerable. Moreover, the same Mitigation Measures identified in the EIR for the adopted project would apply to the proposed project modifications. Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts related to hazards and hazardous materials beyond those identified for the adopted project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## CULTURAL RESOURCES

The EIR evaluated impacts of the adopted project on cultural resources. Existing cultural resource conditions for the modified project are the same as described for the adopted project. Under the modified project, the project limits would slightly increase. The additional acreage would be used for disposal of spoil material that is not suitable for reuse at the dam.

The CEQA-Area of Potential Effects (C-APE) for the modified project has been expanded slightly, as compared with the previously approved C-APE, to include an additional 0.5 acres. This additional area was subjected to an intensive pedestrian archaeological survey in October 2012<sup>18</sup>. Survey of the expanded C-APE did not result in the discovery of any previously-undiscovered archaeological deposits, historic architectural features, or artifacts within or extending into the expanded C-APE area.

One previously recorded cultural resource, historic-period archaeological site CD-20 (the Desmond Camp site) is located partially within Disposal Site I proposed under the modified project. No resources of any kind have been recorded within any of the other proposed disposal sites.

As described below, implementation of the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a significant impact on cultural resources, and no new mitigation measures would be required.

### **Impact 4.10.1: Impact of construction activities on known archaeological resources**

As described in the EIR, construction of the adopted project could have an adverse impact on archaeological resources evaluated as potentially eligible to the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR) and therefore considered to be significant historical resources under CEQA. The EIR concluded this impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.10.1 (Archaeological Evaluation and Monitoring, and Treatment of Human Remains), which is required when CDRP ground-disturbing activity is undertaken within or near the boundaries of any known significant archaeological resource within the project area.

In addition, as described in the EIR, construction activity under the adopted project could result in impacts on known archaeological site CD-20. This was the site of the Desmond Camp, which consisted of worker housing and administrative facilities used during construction of the dam. All buildings were demolished and the site cleaned up at the conclusion of construction. Physical remains today consist of a sparse scatter of historic artifacts and several stone alignments that may represent foundations. CD-20 did not appear to be significant under CRHR criterion A or B or NRHP criterion 1 or 2 (association with significant historical events or persons), but could be significant under CRHR criterion C or D or NRHP criterion 3 or 4 (exemplary of its kind/architecturally significant or having potential to yield data important to history). The EIR determined construction impacts to this site would be significant, and concluded the impact would be reduced to a less-than-significant level by implementation of Mitigation Measures 5.10.1, which, among other actions, calls for further archaeological evaluation.

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<sup>18</sup> Memorandum to Cullen Wilkerson, Cultural Resources APE Expansion Survey Calaveras Dam Replacement Project; ICF International, 2012, November 2, 2012.

In compliance with Mitigation Measure 5.10.1, an Archaeological Evaluation Plan (AEP) was prepared for the project<sup>19</sup>, which set forth the historical context of CD-20 and identified research questions and the types of data needed from the site to address these questions. The AEP indicated that CD-20 would be considered to have the potential to address identified research questions—and therefore would be considered significant—if sealed refuse deposits or discrete artifact concentrations were present.

Subsequently the AEP was implemented and results were reported in an Archaeological Evaluation Report (AER)<sup>20</sup>, which concluded that no architecturally-significant remains have been preserved at CD-20, and that neither sealed refuse features nor discrete artifact concentrations are present at the site. The AER therefore assessed CD-20 as not eligible to the NRHP. Subsequently, the Army Corps of Engineers (the lead federal agency for the project) determined that CD-20 is not eligible for the NRHP and therefore is not an historic property<sup>21</sup>, and the State Historic Preservation Officer concurred<sup>22</sup>).

Although CD-20 is not eligible to NRHP, the San Francisco Planning Department Archaeologist determined that it is eligible to CRHR, and constitutes a historical resource for the purposes of CEQA pursuant to CCR 15064.5(a)(3).

The modified project does not propose to disturb CD-20 but does proposed to bury a portion of CD-20 under spoil material. To assure no inadvertent disturbance of CD-20, under the modified project about one-third of the area of CD-20 would be covered with geotextile fabric and a layer of clean fill (such as sand or washed gravel) before placing spoil material in this area. As described in the EIR, most of CD-20 will be inundated when the reservoir returns to its pre-DSOD restricted level of 756 feet. The portion of the site that would be buried in spoil material under the modified project is within the area that will be inundated during operation of the adopted project. Capping this portion of CD 20 and burying it in spoil material would not affect the values that make CD-20 eligible to CRHR, and would not be considered a significant impact. In addition to avoiding disturbance of CD-20, the geotextile fabric and sand or gravel to be placed prior to burial in spoil material would provide a visually distinctive marker that would facilitate future identification of the surface of CD-20, should the reservoir be drawn down and spoil material be removed at some time in the future. Further, as this area would eventually be inundated, deposition of the spoils would incidentally protect this portion of the site from erosion effects of rising and falling water levels. Therefore, the modified project would not result in any new significant effects on known archaeological resources beyond those identified in the EIR or a substantial increase in the severity of any previously-identified significant impact, and no new mitigation measures would be required.

#### **Impact 4.10.2: Impact of construction activities on unknown archaeological resources**

The EIR determined that construction of the adopted project could have an adverse impact on significant unknown archaeological resources. This significant impact would be reduced to a less-than-significant

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<sup>19</sup> Draft Archaeological Evaluation Plan, Site CD-20, Desmond Camp, Calaveras Dam Replacement Project, URS Corporation, October 3, 2008.

<sup>20</sup> Calaveras Dam Replacement Project Archaeological Evaluation Report, Alameda and Santa Clara Counties, California, URS Corporation, August 2009.

<sup>21</sup> Letter from Army Corps of Engineers to California State Historic Preservation Officer, November 2009.

<sup>22</sup> Letter from California State Historic Preservation Officer to Army Corps of Engineers, February 2010.

level with implementation of Mitigation Measure 5.10.2 (Accidental Discovery Measures), which establishes procedures to be implemented in the event of accidental discovery of unknown archaeological resources during construction.

The modified project would involve placement of spoils over 57.4 acres, 29.1 acres of which are not included in the project footprint analyzed in the EIR. In addition, the modified project would excavate an additional 4.1 acres not analyzed in the EIR for the adopted project. However, all but 0.5 acre of this additional area was included in the original C-APE. The additional 0.5-acre area is located at Disposal Site G as shown on Figure 3. The addition of 0.5 acre to the area previously analyzed slightly increases the project's potential to affect unknown archaeological resources, should any buried resources be present in this 0.5-acre area. However, the portion of the modified project area located outside of the adopted project's C-APE has been subjected to an archaeological survey and no additional resources have been identified.<sup>23</sup> Given the location of new ground disturbance proposed, the likelihood of encountering unknown archaeological resources would not be greater than described in the EIR for the adopted project. As with the adopted project, implementation of Mitigation Measure 5.10.5, which addresses accidental discovery of archaeological resources during construction, would reduce potential impacts on undiscovered archaeological resources during construction of the modified project to a less-than-significant level. Therefore, the modified project would not result in any new significant effects on unknown archaeological resources beyond those identified in the EIR or a substantial increase in the severity of any previously identified significant impact, and no new mitigation measures would be required.

**Impact 4.10.4: Construction impacts on historic architectural resources**

The EIR identified that the adopted project would not result in demolition or alteration of any historic architectural resources that are considered historical resources under CEQA. Two stone fences within the CDRP transmission line APE were identified as potentially eligible to the CRHR, but would not be affected by the adopted project. The modified project would not affect these fences or any other historic architectural resources in any way. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or an increase in the severity of any previously-identified significant impact related to historic architectural resources, and no new mitigation measures would be required.

**Impact 4.10.5: Construction impacts on unknown paleontological resources**

As described in the EIR, there are no known paleontological resources in the project area, but the project site is located in an area where there is a high probability of paleontological resources to occur. As such, the EIR determined that construction of the adopted project could have an adverse impact on significant unknown paleontological resources. As identified in the EIR, this significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.10.5 (Paleontological Resources), which establishes procedures to address impacts of ground-disturbing construction activities on unknown paleontological resources.

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<sup>23</sup> Memorandum to Cullen Wilkerson, Cultural Resources APE Expansion Survey Calaveras Dam Replacement Project; ICF International, 2012, November 2, 2012.

As described in the EIR, the CDRP is located in an area identified as having a high probability to contain paleontological resources. The modified project would place spoils in an additional area of 29.1 acres, and excavate the left abutment in an additional area of 4.1 acres not addressed in the project footprint analyzed in the EIR for the adopted project. This would increase the potential to affect unknown paleontological resources. However, the modified project would be located in the same overall area as the adopted project, and the likelihood of encountering unknown paleontological resources would be similar as that described for the adopted project. As with the adopted project, implementation of Mitigation Measure 5.10.5, which addresses accidental discovery of paleontological resources during construction, would reduce potential impacts on paleontological resources during construction of the modified project to a less-than-significant level. Therefore, the modified project would not result in any new significant effects beyond those identified in the EIR or a substantial increase in the severity of a previously-identified significant impact related to the potential for discovering unknown paleontological resources, and no new mitigation measures would be required.

#### **Impact 6.2.3.8: Cumulative impacts on cultural resources**

As described in the EIR for the adopted project, the geographic scope of cumulative impacts on cultural resources includes the CDRP Cultural Resources Study Area and the Sunol Valley region.

As described above, the modified project would not result in any new significant effects related to impacts on known or unknown archaeological resources, historical architectural resources, or unknown paleontological resources beyond those identified for the adopted project. Therefore, the modified project's contribution to cumulative cultural resources impacts would be similar to those identified for the adopted project; that is, the modified project's contribution to cumulative impacts on archaeological resources and paleontological resources could be cumulatively considerable. However, with implementation of Mitigation Measures 5.10.1 (Archaeological Evaluation and Monitoring, and Treatment of Human Remains), 5.10.2 (Accidental Discovery Measures), and 5.10.5 (Paleontological Resources), the modified project's contribution to these cumulative impacts would be less than significant.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on cultural resources beyond those identified in the EIR or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## **VISUAL RESOURCES**

Existing visual resource conditions for the modified project are the same as described for the adopted project. As described below, implementation of the modified project would not result in any new significant effects on visual resources beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.11.1: Impact of construction activities on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness**

As assessed in the EIR, construction of the adopted project in the vicinity of the dam site would be visible from some areas within the Sunol Regional Wilderness and, although temporary, this impact on the scenic vistas, scenic resources, and the visual character of the area near the reservoir would be significant. Further, the use of screening would be ineffective because of the extensive scale of the project construction area and the large number of vantage points from which construction activities would be

visible from the Sunol Wilderness. The EIR therefore concluded that construction of the adopted project would result in a significant and unavoidable impact on visual resources.

Under the modified project, construction activities at the expanded left abutment would entail similar construction equipment and a similar number of workers as the adopted project, and would not substantially increase the significant impact. Although excavation activities above the left dam abutment would extend approximately one-year beyond the construction schedule described in the EIR, the construction activities would be phased in over time and would result in similar temporary visual impacts as the adopted project. No new mitigation measures could be implemented to reduce the impact to a less-than-significant level; therefore, the impact of the modified project, like that of the adopted project, would be significant and unavoidable.

Construction activities associated with other elements of the modified project (i.e., fill placement in Disposal Sites A/D, G, and H) would not be prominent, if visible at all, when viewed from the Sunol Wilderness. The visual impact from construction of these modified project elements would be minimized by distance and/or obscured by topography. Disposal Sites F and I predominantly lie below reservoir elevation 756 and would not be discernible when viewed from the Sunol Wilderness. The portion of Disposal Site F near the north end of Disposal Site 7 and above the reservoir elevation would not be visible due to topography and intervening vegetation. Disposal Site H would overlap with Disposal Site 3 and other areas within the construction work limits described in the EIR. Due to topography and intervening vegetation these above-reservoir portions of Disposal Site H would not be prominent, if visible at all. Project construction would last three years longer, resulting in an increase in the duration of impact. However, construction activities under the modified project would not increase the level of intensity, and to visitors to the Sunol Regional Wilderness would appear to be visually similar to the conditions described in the EIR. Therefore, these modified project elements would not result in any new significant effects on visual resources associated with construction activities beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.11.2: Impact of site disturbance on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness**

The EIR determined that site disturbance caused by the excavation and grading of Observation Hill and Hill 1000, and the excavation of Borrow Area B, would have a significant impact visual impacts for decades after construction is complete. Implementation of policies of the *Alameda Watershed Management Plan*, calling for site and vegetation restoration (i.e., Action des 5A: contour to mimic surrounding landforms; and Action Veg 4: re-vegetate graded areas) would occur as part of the adopted project. These efforts would lessen the impact on scenic views from Sunol Wilderness, as would implementation of Vegetation and Wildlife Mitigation Measure 5.4.2, Habitat Restoration Measures. However, full restoration would not be feasible within the spillway excavation on Observation Hill and Hill 1000. The slopes of these areas would be excavated to bedrock and benched to stabilize them. The benched slopes on exposed bedrock would not lend themselves to replanting with oak woodland, and would not retain the same visual character that exists now. The EIR thus concluded that this impact would be significant and unavoidable.

Under the modified project, grading of the expanded left abutment excavation would result in a further change to the slope and height of the northern side of Observation Hill. The final elevation of the slope would be 1,160 feet under the modified project, which is 20 feet lower than the final elevation of the slope

under the adopted project. Although the modified project would further alter the permanent profile of this feature when viewed from the Sunol Regional Wilderness, it would not substantially contribute to the significant and unavoidable impact previously analyzed in the EIR. The grading also would result in an incremental uphill extension of the horizontal benches described in the EIR for the north face of Observation Hill under the adopted project. The visual result would be similar but incrementally greater impacts under the modified project as compared to the adopted project. Similar to other excavation on the north face of Observation Hill, a portion of the expanded left abutment excavation would require removal of an additional 12 oak trees. As with the adopted project, full restoration of the expanded left abutment excavation under the modified project would not be feasible since the benched slopes on exposed bedrock would not lend themselves to replanting with oak woodland, and as such would not retain the same visual character. Therefore, similar to the adopted project, this disturbance from the incremental uphill extension of the left abutment excavation under the modified project would be significant and unavoidable, even with implementation of Mitigation Measure 5.4.2 (Habitat Restoration Measures) which would restore habitats where feasible.

As described above for the modified project, the proposed construction activities in other areas (e.g., Disposal Sites A/D, F, G, H, and I) would not be prominent, if visible at all, when viewed from the Sunol Wilderness. The cover of vegetation in these areas of grassland could recover relatively quickly (within a few years) which would minimize visual evidence of disturbance and the impact on views from the Sunol Wilderness; therefore, the proposed project modifications would not alter the conclusions regarding the visual impact of site disturbance described in the EIR. Disposal Sites F and I predominantly lie below reservoir elevation 756 and would not be discernible when viewed from the Sunol Wilderness. The small portion of Disposal Site F near the north end of Disposal Site 7 and above the reservoir elevation would not be visible due to topography and intervening vegetation. Disposal Sites H would overlap with Disposal Site 3 and other areas within the construction work limits described in the EIR. Due to topography and intervening vegetation these above-reservoir portions of Disposal Site H would not be prominent, if visible at all. Thus, the modified project would not result in any new significant effects on visual resources associated with site disturbance as viewed from the Sunol Wilderness beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

Therefore, the modified project elements would not result in any new significant effects on scenic vistas, scenic resources, or visual character beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.11.4: Impact of construction activities and site disturbance on scenic views from county roads**

The EIR determined that construction activities and site disturbance under the adopted project would not substantially impair scenic resources or degrade the visual character of the reservoir as viewed from county roads. Therefore, the EIR concluded the impact of the adopted project on scenic views from county roads would be less than significant, and no mitigation measures are required.

Limited views of construction of the expanded left abutment excavation under the modified project would be visible from Calaveras Road. The visual impact from construction of this modified project element would be minimized by distance and/or obscured by topography and roadside vegetation. Further, the disturbance from the incremental uphill expansion of excavation would not be distinguishable from the left abutment excavation described in the EIR when viewed from Calaveras



Road. Similar to the adopted project, construction activities proposed in the vicinity of the replacement dam (i.e., use of Disposal Sites F and I) would be largely obscured by Observation Hill and would not be prominent, if visible at all, from county roads in the vicinity of the modified project. Site disturbance visible from roads in the vicinity of the modified project (Calaveras Road, Marsh Road, and Felter Road) would result from construction activities associated with the use of Disposal Sites A/D, H and G, which are located in similar locations as Disposal Sites 3 and 7 under the adopted project.

Temporary site disturbances resulting from Disposal Sites A/D, H, and G are largely located in grasslands. These areas would be contoured and re-vegetated at the completion of the disposal activities at these locations to blend with adjacent areas in accordance with Vegetation and Wildlife Mitigation Measure 5.4.2, Habitat Restoration Measures. The cover of vegetation in these areas of grassland could recover relatively quickly (within a few years) to minimize visual evidence of disturbance and the impact on scenic views from Calaveras Road. Thus, the modified project would not result in any new significant effects on visual resources associated with construction activities as viewed from county roads beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.11.5: Impact of construction activities on nighttime light conditions**

The EIR determined that construction of the adopted project would not generate intrusive amounts of light and glare that could affect residential or recreational receptors. None of the project elements under the modified project would change the project assumptions used to analyze nighttime light conditions in the EIR. As indicated in the EIR for the adopted project, the modified project's impact of nighttime construction lighting would be less than significant, and no mitigation would be required. Therefore, the modified project would not result in any new significant effects on visual resources associated with nighttime construction lighting beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.11.6: Impact of project operations on scenic views from county roads**

As with the adopted project, the modified project would entail restoring the operational water level of the reservoir to pre-DSOD restricted levels. This change would increase the area of water coverage at the reservoir perimeter and would enhance, rather than detract from, the scenic quality of the reservoir when viewed from county roads. Additional in-water fill proposed for Disposal Sites F, I and H would not change the area of water coverage at the reservoir perimeter. Operation of the adopted project would not change under the modified project, and the impact on scenic views from county roads would remain less than significant; no mitigation would be required. Therefore, the modified project would not result in any new significant effects on scenic views from county roads beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.9: Cumulative impacts on visual resources**

The geographic scope for cumulative visual impacts for the project is limited to those areas of the Alameda Creek watershed where public views of the Calaveras Dam and Reservoir are available. These areas include parks in the vicinity of the dam and reservoir, particularly the Sunol Regional Wilderness, and segments of county roads in the vicinity of the reservoir.

Most of the anticipated projects identified in EIR Table 6.1 are outside of the geographic scope of the project's visual impacts. Because the adopted project site is at the south end of the Sunol Valley, and is physically separated from the other projects, the potential for cumulative visual impacts is limited.

Similar to the adopted project, the modified project would have some significant and unavoidable visual impacts and could contribute to cumulative visual impacts. However, at locations in the Sunol Valley where views of the other projects are provided, views of the modified project would be minimal, if visible at all, due to the physical separation from the other projects. Consequently, the modified project and other projects are not expected to result in significant cumulative impacts on visual resources when viewed from locations in Sunol Valley.

As identified in the EIR, adverse impacts on the scenic natural visual setting of Little Yosemite would result from barrier modification within Alameda Creek and not from implementation of the modified project. As discussed in the EIR, Calaveras Dam and Reservoir are not visible from lowland areas of Sunol Wilderness, like Little Yosemite, as they are obscured by topography. Calaveras Dam and Reservoir and the surrounding proposed work areas are visible from upland areas of the Sunol Regional Wilderness. The modified project, like the adopted project, is visually isolated and distinct from Little Yosemite such that their effects on scenic views and visual quality could not combine to cause a cumulatively significant degradation of scenic quality.

For these reasons, the modified project would not make a substantial contribution to any new significant cumulative impacts on visual resources beyond those identified in the EIR or result in a substantial increase in the severity of a significant cumulative impact, and no new mitigation measures would be required.

## TRANSPORTATION AND CIRCULATION

The existing roadway network, traffic volumes, transit service, pedestrian and bicycle circulation, and regulatory framework described in the EIR for the adopted project also apply to the modified project. As described below, implementation of the modified project would not result in any new significant effects on transportation and circulation beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.12.1: Traffic delays due to temporary lane and road closures during construction**

The proposed project modifications would not require construction within the right-of-way of public roadways or temporary lane or roadway closures beyond that described for the adopted project; therefore, as with the adopted project, this impact under the modified project remain less than significant. The modified project would not result in any new significant effects due to temporary lane and road closures during construction beyond those identified for the adopted project or an increase in the severity of a significant impact, and no mitigation measures would be required.

### **Impact 4.12.2: Temporary traffic increases on area roadways due to construction-related traffic**

The EIR determined that construction traffic associated with the adopted project would result in temporary increases in traffic volumes on roadways in the immediate vicinity of the dam and along access routes north and south of the dam. Construction-related vehicle trips would include construction workers traveling to and from the project work area, and haul truck trips associated with materials and equipment deliveries. The number of construction-related vehicles traveling to and from the project work area would vary on a daily basis, depending on the construction phase, planned activity, and materials needs.

Construction vehicle trips associated with excavation of the dam foundation and spillway, transport of fill materials from on-site borrow areas, transport of unusable excavated materials to disposal sites, and construction of the dam embankment would occur within the established work limit area surrounding the dam. These construction truck trips would travel within the established work area and would not travel on any area roadways.

Under the adopted project, there would be between 12 and 172 construction truck trips per day depending on the phase of construction. The number of construction workers driving to the site on a daily basis would vary by construction phase, and would range between 80 and 190 workers. Depending on the construction phase, these workers would generate between 160 and 380 vehicle trips (including inbound and outbound trips). Overall, the number of temporary vehicle trips generated by the project would range between about 172 and 532 trips per day.

Construction vehicle trips to and from the project work area would be distributed throughout the day. Construction workers would travel prior to and following their work shift. It is anticipated that there would be two 10-hour shifts, with the majority of workers at the project work area during the day shift. Construction workers would primarily use Calaveras Road between I-680 and Geary Road to access the project work area.

The EIR determined that the worst-case addition of up to 108 project-generated vehicles on Calaveras Road during both the a.m. and p.m. peak hours would not substantially affect the existing operating conditions on Calaveras Road, and the operating conditions would remain at acceptable levels. The EIR therefore concluded that impacts of temporary increases in traffic volumes on Calaveras Road during construction would be less than significant, although drivers on Calaveras Road would experience intermittent delays, particularly if they were traveling behind a truck.

Hauling of materials from off site would occur during weekdays from 7 a.m. to 5 p.m., or may occur at night. The impact of construction truck trips would be less if deliveries of materials occurred during the evening and overnight hours between 5 p.m. and 7 a.m. Traffic volumes on Calaveras Road between I-680 and Geary Road during this 14-hour period are between 30 and 35 percent of the daily traffic volumes, and therefore fewer vehicles would be affected by trucks on Calaveras Road.

During the a.m. and p.m. peak hours, up to 108 project-generated vehicle trips would also travel on I-680. If the Sunol quarries are used by the construction contractors as sources of sand and gravel, the number of project-generated peak hour vehicle trips on I-680 would be less. In addition to project-generated vehicle trips, the closure of Calaveras Road would result in a diversion of up to 10 vehicles from the closed portion of Calaveras Road to I-680 during the a.m. peak hour and up to 50 vehicles during the p.m. peak hour (see the discussion in Impact 4.12.1, above). The addition of up to 118 vehicles during the a.m. peak hour and up to 158 vehicles during the p.m. peak hour to I-680 would represent a minimal increase in peak hour traffic volumes on I-680 of about 1 percent. Since both directions of I-680 in the vicinity of Calaveras Dam currently operate at acceptable levels of service during the a.m. and p.m. peak periods, the addition of up to 158 project-generated vehicle trips to I-680 would not substantially affect the peak period operating conditions on I-680. Therefore, the traffic impacts related to temporary traffic increases on I-680 would be less than significant.

The modified project would extend the construction period by approximately three years, but would not change the magnitude of construction trucks or construction workers traveling to and from the work area on a daily basis. Thus, the modified project would not change the estimated maximum number of worker trips and truck trips that would occur during the peak trip period of spring, summer, and fall 2013 as

identified in the EIR for the adopted project. Therefore, construction of the modified project would not result in any new significant effects related to traffic increases on area roadways due to construction-related vehicle trips beyond those impacts identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.12.3: Impaired access to adjacent roadways and land uses for emergency service providers**

As stated in the EIR, construction activities associated with the dam replacement would be conducted within the established work area, and would not involve construction within the right-of-way of public roadways outside of the work area. Construction vehicle trips associated with construction activities would not substantially affect the LOS operating conditions on Calaveras Road or I-680, and would therefore not impede emergency response vehicles. The EIR therefore concluded that the adopted project would have a less than significant impact on roadway access for emergency service providers.

As with the adopted project, construction of the modified project would be conducted within an established work area and would not involve construction within public roadways outside of the work area. As with the adopted project, the modified project's impacts related to inadequate access for emergency service providers would be less than significant, and no mitigation measures would be required. Therefore, construction of the modified project would not result in any new significant effects related to impaired emergency access to adjacent roadways or land uses beyond those impacts identified for the adopted project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.12.4: Increased potential for traffic safety hazards for vehicles and bicyclists on public roadways during construction**

The EIR determined that the use of the section of Calaveras Road between Geary Road and Felter Road to deliver sand and gravel to the dam construction site would have a significant adverse impact on traffic safety. The EIR identifies Mitigation Measure 5.12.4a (Traffic Control Plan), which requires the SFPUC or its contractors to prepare and implement a Traffic Control Plan, which would include provisions such as installation of signs warning motorists, bicyclists, and pedestrians of the construction zone, notification of detour routes for vehicles and alternate bicycle routes, and use of flaggers, illuminated signs, temporary stoplights, flashing yellow lights, or a combination of these methods to slow approaching traffic at project site access points to reduce hazards during construction. In addition, the EIR identifies Mitigation Measure 5.12.4b (Approval for Road Closures), which requires the SFPUC to seek SFPUC approval from Alameda County to close Calaveras Road from Geary Road to the dam site to through traffic Monday through Friday except for emergency vehicles for a 2-month period in summer 2011 and for an approximately 18-month period beginning in winter 2012. During the same period, SFPUC would be required to seek approval from Santa Clara County to either (1) close Calaveras Road between the dam access road and Felter Road to through traffic Monday to Friday, except for emergency vehicles, to avoid creating a 7-mile long dead-end with no outlet; or (2) construct a turnaround at the dam site and installing signage at Felter Road advising of no outlet 7-miles up the road due to construction. The closed portion of Calaveras Road would be swept clean on either Friday evening or Saturday morning, and reopened for traffic on Saturday and Sunday. The EIR concluded that implementation of Mitigation Measures 5.12.4a and 5.12.4b would reduce the traffic safety impacts during project construction to a less than significant level. However, because closure of Calaveras Road is subject to the approval of Santa

Clara and Alameda Counties, implementation of Mitigation Measure 5.12.4b is not fully within the control of the SFPUC. As such, the EIR determined that if Alameda County does not permit the temporary closure of the portion of Calaveras Road from Geary Road to the dam site as specified in Mitigation Measure 5.12.4b, the traffic hazards during construction would not be fully mitigated, and that this impact is potentially significant and unavoidable.

Under the modified project, the use of Calaveras Road for the delivery of sand and gravel would occur in 2015 and 2016 rather than in 2013 and 2014 under the adopted project; however, the number of related haul truck trips and the duration of this activity would remain the same as described in the EIR. Although the project construction period would be extended by approximately three years, the daily vehicle trips generated by construction trucks and workers traveling to and from the work area would not substantially change. While the period of time in which Calaveras Road is used for worker vehicles and other construction-related vehicles (other than haul trucks used for the delivery of sand and gravel) would be extended, the modified project would not result in a substantial increase in the potential for significant traffic safety hazards for vehicles and bicyclists on public roadways, beyond that identified for the adopted project. The modified project would not result in any new significant effects or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.12.5: Increased wear and tear on the designated haul routes used by construction vehicles**

The EIR determined that the use of numerous heavy trucks to transport equipment and materials to the work area under the adopted project could affect road conditions on haul routes in the vicinity of the modified project, including Calaveras Road. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.12-4a (Traffic Control Plan), which would reduce excessive wear and tear on public roadways, including Calaveras Road, by requiring any roadway segments damaged by construction activities to be repaired to preconstruction conditions.

The modified project would not affect the number of heavy trucks needed to transport construction materials or equipment to the work area, and the transportation of additional material from excavation of the left dam abutment to on-site disposal areas would not affect public roadways. The modified project would extend the construction period by approximately three years; however, additional construction worker trips over this period would not substantially affect roadway conditions because these trips would predominantly be made in light passenger vehicles, which do not contribute substantially to excess roadway wear and tear. Therefore, construction of the modified project would not result in any new significant effects related to wear and tear on the designated haul routes used by construction vehicles beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.10: Cumulative impacts on transportation and circulation**

As described in the EIR for the adopted project, the geographic scope of potential cumulative impacts related to transportation and circulation includes Calaveras Road between the project site and I-680, the I-680 on- and off-ramps at Calaveras Road, and I-680 in the vicinity of the Calaveras Road crossing.

As discussed above, although the modified project would increase the construction schedule by approximately three years, it would not result in an increase of the peak number of daily or hourly trips that would occur under the adopted project, the length of time that Calaveras Road would be used for delivery of sand and gravel to the dam construction site, or the peak traffic volumes used in the EIR

analysis of cumulative traffic impacts of the adopted project. Therefore, the modified project's contribution to cumulative transportation and circulation impacts would be the same as those identified for the adopted project, which with implementation of Mitigation Measure 5.12.4a (Traffic Control Plan) would be less than significant.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on traffic and transportation beyond those identified in the EIR or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## AIR QUALITY

The existing air quality conditions for the modified project are the same as described in the EIR for the adopted project. Please refer to the EIR for descriptions of air pollutants, including greenhouse gases (GHG), carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO<sub>x</sub>), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). The EIR evaluated air quality impacts based on the Bay Area Air Quality Management District's (BAAQMD) CEQA Air Quality Guidelines. At the time the EIR was prepared, the BAAQMD was in the process of updating these guidelines; therefore the EIR evaluated air quality impacts based on both the previous (1999) guidelines and the proposed (2010) guidelines. The air quality significance thresholds identified in the BAAQMD's 2010 Air Quality Guidelines are generally as protective or more than the 1999 Air Quality Guideline thresholds; therefore this analysis compares the modified project based on the 2010 significance thresholds.

As described below, implementation of the modified project would not result in any new significant effects on air quality beyond those identified for the adopted project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.13.1: Impact of short-term increases in emissions of criteria air pollutants and precursors**

As described in the EIR, the adopted project would result in short-term increases in average daily construction-related emissions of criteria air pollutants and ozone precursors (e.g., ROG and NO<sub>x</sub>) from motor vehicle travel, heavy truck travel, and off road diesel construction equipment. The resulting emissions would exceed the EIR significance criteria for daily emissions of ROG and NO<sub>x</sub>. Implementation of Mitigation Measures 5.13.1a (Fugitive dust mitigation measures), 5.13.1b (Exhaust emissions mitigation measures), 5.13.3a (Diesel Particulate Matter Reduction – Off-road Equipment) and Mitigation Measure 5.13.3b (Diesel Particulate Matter Reduction – On-site Haul Trucks and Idling Limits) would reduce construction-related average daily emissions of ROG and NO<sub>x</sub> by at least 5 percent and 20 percent respectively, but that even with these mitigation measures, it would not be feasible to reduce construction-related average daily emissions of ROG and NO<sub>x</sub> below the level of significance. Therefore, the EIR concluded that construction-related average daily emissions of ROG and NO<sub>x</sub> would result in a significant and unavoidable air quality impact.

Construction of the modified project would be undertaken using substantially the same numbers and types of construction vehicles and equipment and the same numbers of construction workers as the adopted project. In addition, under the modified project, spoils may be transported from the dam construction area to Disposal Site 7 using a grid-powered electric conveyor rather than by off road haul truck as assumed in the EIR for the adopted project. If the conveyor option is used, the modified project would reduce emissions generated by transporting spoils to Disposal Site 7 as compared to the emissions

assumed for the adopted project. While the modified project would result in a greater overall quantity of emissions as compared to the approved project due to the longer project duration (seven years rather than four years), the average daily emissions of the modified project would be similar to the adopted project. As with the adopted project, implementation of Mitigation Measures 5.13.1a, 5.13.1b, and 5.9.2a would reduce PM<sub>10</sub>, and PM<sub>2.5</sub> emissions below the significance thresholds, but ROG and NO<sub>x</sub> emissions would remain significant and unavoidable. With respect to fugitive dust, if a project implements dust control BMP's, the project is not considered to result in significant fugitive dust impacts. As with the adopted project, the modified project would be subject to implementation of the dust control BMPs identified in Mitigation Measure 5.13.1a, and the impact would be less than significant.

Therefore, construction of the modified project would not result in any new significant effects to regional air quality beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.13.3: Impact of exposing nearby populations to short-term project-generated emissions of diesel PM**

As described in the EIR, diesel-fueled mobile sources and stationary off-road equipment used during construction of the adopted project would emit diesel PM, which could affect nearby populations. The EIR determined that this impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.13.1b (Exhaust emissions mitigation measures), 5.13.3a (Diesel Particulate Matter Reduction – Off-road Equipment), and 5.13.3b (Diesel Particulate Matter Reduction – On-site Haul Trucks and Idling Limits), which require scheduled tune-ups of construction vehicles and equipment, all off-road diesel construction equipment to be equipped with U.S. Environmental Protection Agency Tier 2 engines and California Air Resources Board Level 3 Diesel Emission Control Strategies, and the use of 2004 model-year or newer engines for haul trucks limited to on-site routes.

For the adopted project, the health risk screening analysis (HRSA) determined that with implementation of the mitigation measures described above, the potential excess cancer risk from diesel PM would not exceed the significance threshold of >10.0 in 1 million, the non-cancer risk would be less than the Chronic Hazard Index (HI) threshold of >1, and the annual average PM<sub>2.5</sub> concentration would not exceed the threshold of >0.3µg/m<sup>3</sup> at the maximally exposed sensitive receptor location.

An additional HRSA was prepared for the modified project following the same methodology used for in the EIR the adopted project.<sup>24</sup> As shown in the HRSA for the modified project, the additional period in which construction vehicles and equipment would be used would increase the total project diesel PM emissions by approximately 33 percent as compared to the adopted project. However, as discussed below, with the application of mitigation measures provided in the EIR the level of diesel PM at the maximally exposed sensitive receptor location would not exceed the significance thresholds enumerated above.

The location of the maximally exposed individual sensitive receptor identified in the EIR for the adopted project – assumed to be a child living at a residence near the horse stables in the Sunol Regional Wilderness area – is no longer applicable to the analysis of health risk impacts for the adopted or

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<sup>24</sup> Screening Evaluation of Proposed Project Modifications on Air Quality Risks and Hazards for the Calaveras Dam Replacement Project, Alameda County, California, ENVIRON, November 29, 2012.

modified project. East Bay Regional Park District chose to have this residence vacated prior to the start of construction and has indicated that it intends to continue to have it vacated throughout project construction.<sup>25</sup> Consequently, the maximally exposed sensitive receptor is now a residence located approximately 2.4 miles to the northwest of the Calaveras Dam. Therefore, compared to the health risk impact reported in the EIR, the cancer risk for the maximally exposed individual resident (child) under the modified project would decrease from 9.96 in a million to 9.2 in a million, the chronic HI would decrease from 0.06 to 0.03, and the annual average PM<sub>2.5</sub> concentrations would decrease from 0.28 µg/m<sup>3</sup> to 0.15 µg/m<sup>3</sup>.<sup>26</sup> These results are based on the assumption that following mitigation measures from the EIR would be implemented: Mitigation Measures 5.13.1b (Exhaust emissions mitigation measures), 5.13.3a (Diesel Particulate Matter Reduction – Off-road Equipment), and 5.13.3b (Diesel Particulate Matter). With mitigation, the results are below the EIR significance thresholds for determining whether construction activities would expose sensitive receptors to substantial levels of air pollutant concentrations. Therefore, similar to the adopted project, with implementation of Mitigation Measures 5.13.1b, 5.13.3a, and 5.13.3b, the modified project's impact would be less than significant.

Implementation of the modified project would not result in any new significant effects related to emissions of diesel PM beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.13.5: Impact of exposing sensitive receptors to emissions of odors**

The EIR determined that the adopted project would not result in construction- or operations-related emissions of odors. The EIR concluded therefore that impacts related to exposing sensitive receptors to emissions of odors would be less than significant, and that no mitigation measures would be required. Similarly, the proposed project modifications would not result in construction- or operations-related emissions of odors. Thus, implementation of the modified project would not result in any new significant effects related to emissions of odors beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.13.6: Impact of increasing criteria air pollutant and ozone precursor emissions that would conflict with or obstruct implementation of the applicable air quality plan**

The EIR determined that construction emission generated by the adopted project would not conflict with or obstruct implementation of the applicable air quality plan related to criteria air pollutant and ozone precursor emissions—the Bay Area Ozone Strategy—because the project would not directly induce population growth. As such, the EIR conclude that the adopted project would have a less than significant impact on implementation of the applicable air quality plan.

Like the adopted project, the modified project would not directly induce population growth, and thus emissions of criteria air pollutants and ozone precursors generated by the modified project would not conflict with any air quality planning efforts. Since publication of the EIR for the adopted project, the BAAQMD has adopted the 2010 Clean Air Plan, which replaces the Bay Area Ozone Strategy as the most recently adopted regional air quality plan. The modified project's air pollutant emissions would occur

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<sup>25</sup> Willey, Gordon, EBRPD, Email to Maria Le, SFPUC, November 28, 2012.

<sup>26</sup> Screening Evaluation of Proposed Project Modifications on Air Quality Risks and Hazards for the Calaveras Dam Replacement Project, Alameda County, California, ENVIRON, November 29, 2012.



only during the construction period and would not persist upon completion of construction activities. Operation of the adopted project would not change with implementation of the modified project. Thus the conclusions provided in the EIR related to induced population growth would remain applicable; that is, the modified project would not result in any induced population growth and thus would not have the potential to conflict with the 2010 Clean Air Plan. Implementation of the modified project would not result in any new significant effects related to emissions conflicts with the applicable air quality plan beyond those identified in the EIR or increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.13.7: Impact of increasing GHG emissions that conflict with the state goal of reducing GHG emissions in California to 1990 levels by 2020 (e.g., a substantial contribution to global climate change) or conflict with San Francisco's *Climate Action Plan* such that emissions would impede implementation of the local GHG reduction goals established by San Francisco's 2008 Greenhouse Gas Reduction Ordinance**

As described in the EIR, construction of the adopted project would result in short-term increases in emissions of greenhouse gases (GHG) from worker and construction vehicles during the 4 year period of construction. The EIR estimated the amount of GHG emissions per day and per year expected from the adopted project. The EIR concluded that because project construction would conform to the Early Action Measures pursuant to the California Global Warming Solutions Act and with the CCSF and SFPUC GHG reduction actions, the impact from construction-related GHG emissions generated by the adopted project would not conflict with the state's goals of reducing GHG emissions to 1990 levels by 2020, or the City's GHG reduction goals established in the Greenhouse Gas Reduction Ordinance. Therefore, the EIR concluded that the impacts of the adopted project from construction GHG emissions would be less than significant.

Similar to the adopted project, the modified project would result in short-term increases in emissions of GHGs, also from worker and construction vehicles. The peak project activities and thus emissions per day and per year under the modified project are expected to be similar to the adopted project, although the period of time that the project would emit construction-related GHGs would increase from 4 years to 7 years. As with the adopted project, the modified project would conform to the California Global Warming Solutions Act Early Action Measures and the CCSF and SFPUC GHG reduction actions, and thus would not conflict with the state's goals of reducing GHG emissions to 1990 levels by 2020, or the City's Greenhouse Gas Reduction Ordinance. Therefore, implementation of the modified project would not result in any new significant effects related to construction-related GHG emissions beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.11: Cumulative impacts on air quality**

As described for the adopted project in the EIR, the geographic scope for potential cumulative air quality impacts is the San Francisco Bay Area Air Basin (Basin). For potential cumulative impacts on air quality, all of the projects in EIR Table 6.1 are included in the analysis. For regional criteria pollutants, regional development now and in the next several years is also considered in the analysis.

As with the adopted project, the modified project's contribution of construction-related emissions of criteria pollutants to cumulative impacts would be reduced with implementation of Mitigation Measures 5.13.1a (Fugitive dust mitigation measures), 5.13.1b (Exhaust emissions mitigation measures), and 5.9.2a (Dust Mitigation Plan and Comprehensive Air Monitoring Plan). However, as with the adopted project,

when evaluated relative to the EIR thresholds of significance, the modified project's daily construction emissions would result in levels of ROG and NO<sub>x</sub> that would exceed the project level significance thresholds, and would therefore result in a considerable contribution to cumulatively significant regional air quality impacts even with implementation of the identified mitigation measures. No additional feasible mitigation exists that would reduce the construction-related daily emissions of ROG and NO<sub>x</sub> to levels below the EIR significance thresholds.

Similar to the analysis in the EIR, with respect to fugitive dust, if a project implements dust control BMP's, the project would not contribute to cumulative fugitive dust impacts. Furthermore, fugitive dust impacts tend to be localized. Therefore, as with the adopted project, with implementation of the dust control BMPs identified in Mitigation Measure 5.13.1a, cumulative fugitive dust impacts would be less than significant.

As described above, the results of the HRSA for the modified project indicate that with the implementation of Mitigation Measures 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures), 5.13.3a (Diesel Particulate Matter Reduction – Off-road Equipment), and 5.13.3b (Diesel Particulate Matter Reduction – On-site Haul Trucks and Idling Limits), at the maximally exposed sensitive receptor the potential excess cancer risk from diesel PM emissions would be less than the significance threshold of >10.0 per one million for cancer risk, the non-cancer chronic HI would be less than the threshold of >1, and the annual average PM<sub>2.5</sub> concentration would be less than the threshold of >0.3 µg/m<sup>3</sup>. As stated on page 6-47 of the EIR, the cumulative thresholds of significance for health risks from all sources within 1,000 feet of the project site are: an excess cancer risk of >100 per one million, a non-cancer chronic HI of >10.0, and PM<sub>2.5</sub> concentration >0.8 µg/m<sup>3</sup>. These cumulative thresholds are about an order of magnitude higher than the thresholds for individual projects. Cumulative health risks are measured at the modified project's maximally exposed individual (MEI) sensitive receptor. As discussed above under Impact 4.13.3, the modified project MEI is a residence located approximately 2.4 miles northwest of the Calaveras Dam. Other projects in Sunol Valley listed in Table 6.1 of the EIR may have the potential to contribute incrementally to cumulative health risks at this MEI. However, the combined magnitude of these other projects is less than that of the modified project. Further, diesel PM emissions disperse with distance, and all of the projects in Table 6.1 are located a substantial distance from the identified MEI. Therefore, cumulative health risks at the modified project MEI are expected to be no greater than the risk identified for the adopted project, and would be well below the cumulative thresholds listed above. Thus the modified project would not make a substantial contribution to any significant cumulative impacts related to diesel PM emissions beyond that identified in the EIR or result in a substantial increase in the severity of a significant cumulative impact, and no new mitigation measures would be required.

As described above, the modified project's contributions to cumulative GHG emissions would not conflict with the state goal of reducing GHG emissions to 1990 levels by 2020, as set forth in the California Global Warming Solutions Act of 2006, or the City's own climate action goal as set forth in the Greenhouse Gas Reduction Resolution. Because climate change is a global impact caused by emissions of GHGs, the GHG standards identified by the BAAMQDs project-level thresholds for operational GHG emissions are set at levels by which a project would be expected to result in cumulatively considerable GHG emissions that contribute to global climate change. As with the adopted project, the modified project would not exceed the project level GHG standards by which a project would be considered to result in cumulatively considerable GHG emissions. Furthermore, with continuing implementation of GHG reduction actions by the CCSF and SFPUC, and implementation of GHG reduction actions

incorporated in the WSIP, the modified project would not conflict with the state's goals of reducing GHG emissions to 1990 levels by 2020, or the City's GHG reduction goals established in the Greenhouse Gas Reduction Ordinance. Therefore, the modified project would not contribute considerably to cumulative GHG emissions.

In conclusion, the modified project would not result in new air quality or GHG impacts beyond those identified in the EIR or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## **NOISE AND VIBRATION**

The information presented in the EIR on the existing noise environment, vibration, and the regulatory framework also applies to the modified project. The nearest sensitive receptor for noise impacts to the work areas affected by the modified project identified in the EIR is at a residence near the horse stables in the Sunol Regional Wilderness area located approximately 1.2 miles northwest of the dam construction area. However, as noted above under Impact 4.13.3, the East Bay Regional Park District chose to have this residence vacated prior to the start of construction and has indicated that it intends to continue to have it vacated throughout project construction. Consequently, the nearest receptor for noise impacts from construction of the proposed project modifications is approximately 2.4 miles northwest of the dam vicinity. In addition, as described in EIR, hiking trails in the nearby wilderness areas are located in the vicinity of the project area.

As described below, implementation of the modified project would not result in any new significant effects on noise and vibration beyond those identified for the adopted project or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.14.1: Disturbance from temporary construction-related noise increases**

The EIR determined that construction of the adopted project would result in temporary noise increases at distant sensitive receptors during hours beyond the time limits specified in the Alameda County and Santa Clara County noise ordinances. The EIR concluded that Mitigation Measure 5.14.1 (Noise Controls) would reduce construction noise to ordinance limits and to levels below the sleep interference criterion, for most receptors, but that the closest residential receptors to Borrow Area E and Staging Area 11 at the south end of the reservoir (Receptors A, B, and C as described on Tables 4.14.5 and 4.14.6 in the EIR) could still be subject to noise disturbance from peak noise events such as backup beepers. Due to this noise effect, the EIR concluded that the adopted project would have a significant and unavoidable noise impact during construction.

Under the modified project, noise from operation of construction equipment for the proposed excavation of the left dam abutment landslide and placement of materials at the additional disposal sites would be similar to construction noise levels presented in the EIR, but would be extended by three years. The noise analysis for the adopted project indicates that construction activities in the vicinity of the dam would not significantly affect the closest sensitive receptors to this location, including hikers using trails in the Sunol and Ohlone Regional Wilderness preserves; this conclusion would apply as well to the project modifications near the dam, including the excavation of the left dam abutment and additional materials disposal. The project modifications would not involve work at the south end of the reservoir and would not therefore contribute to the nighttime noise impact on residential receptors near Borrow Area E and Staging Area 11. Although the modified project would extend the duration of construction by

approximately three years, with implementation of Mitigation Measure 5.14.1, the construction noise impacts of the project modifications would meet applicable noise ordinance limits and the 50 dBA sleep interference criterion.

In addition, the EIR evaluated construction noise impacts on hikers using trails in the nearby public recreational areas. The EIR determined that because hikers would be exposed to construction noise for a limited duration (as they pass through the area), and would have the option of using other trails (the SFPUC has coordinated with the East Bay Regional Park District to post informational signs at the trailheads of affected trails), this impact would be less than significant. The same analysis and conclusions would apply to the modified project.

Therefore, the modified project would not result in any new significant effects due to construction-related noise beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.14.2: Temporary noise disturbance along construction haul routes**

The EIR determined that vehicular traffic generated by project workers on Calaveras Road under the adopted project would not significantly increase noise levels along this road. The proposed project modifications would extend the duration of construction worker traffic on Calaveras Road by three years, but would not increase haul truck traffic on Calaveras Road beyond that identified in the EIR for the adopted project. Similar to the adopted project, worker vehicle traffic on Calaveras Road under the modified project, as well as on proposed on-site roads, would generate noise increases compared to existing conditions. As concluded in the EIR for the adopted project, these noise levels would be less than significant at all sensitive receptors except the watershed keeper's residence on Calaveras Road<sup>27</sup>. At this residence, peak hourly project-related vehicle and truck increases could result in nighttime noise levels that exceed the 50-dBA sleep interference criterion and 53-dBA nighttime ordinance noise limit, a significant impact. While topographic characteristics between Calaveras Road and this residence likely provide sufficient noise reduction, continued implementation of Mitigation Measure 5.14.1 (Noise Controls) for the modified project would ensure that nighttime truck traffic noise is reduced to ordinance limits and below the sleep interference criterion, which would reduce impacts associated with noise disturbance along construction haul routes to a less-than-significant level.

Therefore, the modified project would not result in any new significant effects due to noise disturbance along construction haul routes beyond those identified in the EIR or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.14.3: Disturbance due to construction-related controlled blasting**

As discussed in the EIR, blasting activities required for construction of the adopted project could generate peak noise events that result in momentary speech interference effects (2 seconds) that are up to 19 dBA above the 70-dBA speech interference criterion once or twice per day, which would result in a significant noise impact. The EIR concluded that implementation of Mitigation Measure 5.14.3 (Blasting Noise Control), which requires modifications to either blasting charges or frequency and timing of blasting to

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<sup>27</sup> As of August 2011, this residence was vacant.

ensure compliance with applicable noise ordinance limits, would reduce blasting noise impacts to a less-than-significant level.

The proposed project modifications would require additional blasting beyond that described in the EIR for the adopted project. As with the adopted project, blasting under the modified project would be conducted in accordance with Mitigation Measure 5.14.3, which would reduce any significant impact to a less-than-significant level. Therefore, the modified project would not result in any new significant noise impacts related to controlled blasting beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 4.14.4: Disturbance due to construction-related vibration**

As discussed in the EIR, vibration generated by blasting and pile driving during construction of the adopted project would not result in structural damage if it produced vibrations of less than 0.5 in/sec PPV (measured at the residential building setback line at the ground surface). The extent of vibration generated by controlled blasting would depend on the size of the charge, but at distances of over 3 miles, vibration generated by blasting activities would remain well below this threshold. Vibration from pile driving for the adopted project would also be below the structural damage threshold. As such, the EIR concluded that the adopted project would have a less than significant impact due to construction-related vibration.

The proposed project modifications would not involve pile driving, but would require additional blasting beyond that described in the EIR for the adopted project. Similar to the adopted project, vibration generated by blasting for the modified project would be well below the structural damage threshold at the nearest structure (over 3 miles from the dam construction site). Therefore, the modified project would not result in any new significant vibration impacts related to construction-related vibration beyond those identified in the EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

#### **Impact 6.2.3.12: Cumulative impacts on noise and vibration**

As described in the EIR for the adopted project, the geographic scope of cumulative impacts for the modified project on noise includes the residential sensitive receptors located off of Calaveras Road, Marsh Road, and Felter Road in the vicinity of the construction sites and haul routes, including the watershed keeper's residence near Calaveras Road.

As described above, none of the proposed project modifications would substantially change the assumptions or conclusions regarding noise impacts identified for the adopted project, and the modified project's contribution to cumulative noise impacts would therefore be similar to the adopted project. Thus, similar to the adopted project as analyzed in the EIR, the modified project would not contribute to any significant cumulative noise impact resulting from construction activities, nor would a cumulative noise impact result from traffic along Calaveras Road during the daytime.

As with the adopted project, implementation of traffic controls that limit nighttime truck operations to maintain noise levels at 50 dBA ( $L_{eq}$ ) at the closest receptors (see Mitigation Measure 5.17.1, Restrict Truck Operations at Night) would reduce the modified project's contribution to cumulative nighttime noise traffic impacts to a less-than-significant level.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts related to noise and vibration beyond those identified for the adopted project or

substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

#### **UTILITIES, SERVICE SYSTEMS, AND PUBLIC SERVICES**

The fire protection, law enforcement, solid waste disposal, and public utilities setting and regulatory framework described for the adopted project also apply to the modified project. As described below, implementation of the modified project would not result in any new significant effects on utilities, service systems or public services beyond those identified for the adopted project or increase the severity of a significant impact, and no new mitigation measures would be required.

##### **Impact 4.15.1: Impact of construction activities on the demand for fire protection services**

The EIR determined that construction of the project would introduce new potential ignition sources at the project site and vicinity in the form of construction vehicles, construction equipment, and construction workers, thereby increasing the potential demand for fire protection services during the construction period. State law requirements governing the use of construction equipment in high fire hazard areas, the lines of defense in event of a fire, and the water supply sources for firefighting would be the same under the modified project as described for the adopted project. As with the adopted project, compliance with applicable state laws and regulations and with the SFPUC's WMP requirements for fire pre-suppression and fuel management actions would minimize the temporary, construction-related potential for wildfire ignition under the modified project, and this impact would be less than significant.

While the modified project would extend the duration of construction for approximately three years compared to the adopted project, the overall risk of fire due to potential ignition sources associated with construction activities would be similar to the adopted project. As noted above, implementation of the fire pre-suppression and fuel management actions required in the Alameda WMP and compliance with California statutory requirements in the Public Resources Code would minimize the potential for wildfire ignition. Therefore, the modified project would not result in any new significant effects related to demand for fire protection services beyond those identified for the adopted project or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

##### **Impact 4.15.2: Impact of construction activities on the demand for law enforcement services**

As described in the EIR, construction of the adopted project would entail periodic traffic controls on Calaveras Road and planned weekday road closures on Calaveras Road (between Geary Road and Felter Road) for public safety during peak construction periods; these road closures and periodic traffic controls would decrease public access to a portion of Calaveras Road and therefore decrease the potential demand for law enforcement in this area. Because the periodic traffic controls could result in less demand for law enforcement services on and adjacent to the project site during construction, and demand for law enforcement would return to existing levels following construction, the EIR determined that this impact under the adopted project would be less than significant.

The additional construction activities under the modified project would be confined to the project site and would not affect traffic controls on Calaveras Road or the planned closures of Calaveras Road as described in the EIR for the adopted project. Therefore, the modified project would not result in any new significant effects related to demand for law enforcement services beyond those identified in the EIR or

substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.15.3: Impact of construction activities on the demand for landfill capacity**

The EIR determined that construction of the adopted project would generate construction debris, demolition materials, excavated soils, and refuse. Some of the materials generated from the excavation or grading activities would be reused in the construction of the replacement dam and spillway. The modified project would increase the amount of solid waste. The largest amount of additional solid waste generated by the project modifications—an estimated 3 million cubic yards of additional materials from excavation of the left dam abutment landslide—would be disposed of at six additional on-site disposal sites. As with the adopted project, the primary solid waste requiring off-site disposal would be refuse from construction workers, which would be disposed of at either the Altamont or Vasco Road landfills, although more than half of this refuse would likely be recyclable. Off-site disposal of this additional waste stream under the modified project would be temporary, occurring only during the additional three-year construction period, and would not substantially affect the remaining capacity of these landfills. Therefore, the modified project would not result in any new significant effects related to solid waste disposal beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 4.15.4: Impact of construction activities on electrical transmission lines to Calaveras Dam and related structures**

Construction of the adopted project would require removal of existing electrical transmission lines that serve Calaveras dam and related structures. As discussed in the EIR, new electrical transmission lines would be installed and brought into service prior to removal of the existing lines and the adopted project would result in no interruption of electrical service. The EIR therefore concluded that the adopted project would have a less than significant impact on electrical service to Calaveras Dam and related structures.

The proposed project modifications would not affect the sequencing for the replacement of electrical transmission lines described in the EIR for the adopted project. Thus, the modified project would not result in any new significant effects beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.13: Cumulative impacts on utilities, service systems, and public services**

As described in the EIR for the adopted project, the geographic scope of cumulative impacts for the modified project on public services and utilities encompasses the Alameda Creek watershed and the Sunol Valley region.

As described above, none of the proposed project modifications would substantially change the assumptions or conclusions regarding impacts on utilities and services identified for the adopted project, and the modified project's contribution to cumulative utilities and services impacts would therefore be the same as for the adopted project. Compliance with California Public Resources Code provisions governing the use of construction equipment in fire-prone areas and compliance with the fire pre-suppression requirements of the Alameda WMP would ensure that the modified project's incremental contribution to any cumulative impacts on the response capabilities of local fire protection agencies would be less than significant. Implementation of traffic control plans that provide for emergency vehicle access would ensure that cumulative impacts on the response capabilities of local law enforcement

agencies would be less than significant. The modified project's contribution to cumulative construction-related demand on regional landfill capacity would not be cumulatively considerable, and the modified project's impact on cumulative landfill capacity would be less than significant. The modified project would not result in cumulative impacts on existing public utilities, and its contribution to cumulative impacts on public services related to expanded infrastructure would be less than significant.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on utilities, service systems, and public services beyond those identified for the adopted project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

## **MINERALS AND ENERGY RESOURCES**

Existing mineral and energy resources and the regulatory framework described for the adopted project also apply to the modified project. As described below, implementation of the modified project would not result in any new significant effects on mineral and energy resources beyond those identified for the adopted project or increase the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.16.1: Impact of using rock, clay, and sand to construct the replacement dam**

The modified project would not alter the quantity of rock, clay, and sand used to construct the dam; on-site rock, aggregate, and clay resources have not been and are not planned to be made available for any other use besides the replacement dam; and the amount of sand and gravel needed from off-site sources would not deplete a scarce local or regional mineral resource. Therefore, the modified project would not result in any new significant impacts on mineral resources beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

### **Impact 4.16.2: Impact of temporary increase in energy use to construct the replacement dam**

Construction of the project would involve substantial use of numerous diesel- and gasoline-powered vehicles and other construction equipment. The EIR determined that the potentially significant impact resulting from the wasteful use of fuels due to excessive idling and other inefficient site operations under the adopted project would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures).

Construction of the modified project would extend the length of the project construction period by approximately three years and would increase fuel use associated with the additional workers and associated vehicle and equipment usage for excavation of the left dam abutment landslide and disposal of additional material. As described above, implementation of Mitigation Measure 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures), which includes limiting idling time and performing low-emissions tune-ups, would ensure that construction of the modified project does not use energy in a wasteful manner, thus reducing the impact of the modified project construction on energy use to a less-than-significant level.

In addition, all spoils material would be transported to the disposal sites by truck. However, under the modified project, approximately 1.5 million cubic yards of material from the dam construction area may be transported to Disposal Sites 7 and G by conveyor using electrical grid power. If the conveyor option is



implemented, approximately 1.06 cubic yards of spoils would be transported to Disposal Site 7 using electrical grid power rather than by truck. Thus, under this option, the modified project would substantially reduce the energy used to transport materials to Disposal Site 7 compared to the adopted project. Therefore, the modified project would not result in any new significant impacts on energy resources beyond those identified in the EIR or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

**Impact 6.2.3.14: Cumulative impacts on mineral and energy resources**

As described in the EIR for the adopted project, the geographic scope of cumulative impacts on mineral and energy resources would be southern Alameda and northern Santa Clara Counties and the Bay Area region.

As described above, none of the proposed project modifications would substantially change the assumptions or conclusions regarding impacts on minerals and energy resource identified for the adopted project, and the modified project's contribution to cumulative minerals and energy impacts would therefore be the same as for the adopted project. The adopted project's contribution to cumulative demand for mineral resources would not be significant, and the region-wide cumulative increase in construction-related energy consumption would not be cumulatively significant. Operation of the adopted project would not substantially increase energy use compared to existing operations and would therefore not contribute to long-term cumulative impacts on energy resources or to cumulative impact related to wasteful energy use during project operation. The proposed project modifications would not affect operations of the reservoir and thus would not alter this determination.

Therefore, the modified project would not make a substantial contribution to any new significant cumulative impacts on mineral and energy resources beyond those identified for the adopted project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

**CONCLUSION**

Based on the foregoing, it is concluded that the analyses conducted and the conclusions reached in the Final EIR certified on January 27, 2011 remain valid. The proposed revisions to the project will not cause new significant impacts not identified in the EIR, and no new mitigation measures will be necessary to reduce significant impacts. Other than as described in this Addendum, no project changes have occurred, and no changes have occurred with respect to circumstances surrounding the proposed project that will cause significant environmental impacts to which the project will contribute considerably, and no new information has become available that shows that the project will cause significant environmental impacts. Therefore, no supplemental environmental review is required beyond this addendum.

Date of Determination:

I do hereby certify that the above determination has  
been made pursuant to State and Local requirements.

December 13, 2012



BILL WYCKO  
Environmental Review Officer

cc: SFPUC

Bulletin Board / Master Decision File  
Distribution List